

## 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 Turkey for 87 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 percent of the Company's shares have been offered to the public, and T.C. The 49.12 percent share in the Privatization Administration of the Ministry of Treasury and Finance was transferred to the Turkey 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 six subsidiaries and 12 joint ventures, adding up to 18 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 the most countries and international destinations in the world, Turkish Airlines flies to a total of 324 destinations as of the end of 2020, of which 52 are domestic and 272 are international. Turkish Airlines increased the number of aircraft in its fleet by 8.7% in the last 5 years to 363 by the end of 2020, of which 338 are passenger aircraft including 104 widebody and 234 narrow-body and 25 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 comply with non-mandatory principles. Turkish Airlines' Board of Directors consists of nine members, three of which are independent, elected by the General Assembly.

Turkish Airlines, together with its subsidiaries, employs more than 61 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 the most countries in the world, connects many points in Turkey and the world with its flight network reaching 127 countries, 319 cities and 324 destinations. Carrying 74.3 million passengers in 2019, Turkish Airlines carried 28 million passengers with 363 aircraft in its fleet in 2020, 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, economy and the environment. Our sustainability program is built on four pillars: Governance, Development, People and the World, each of which contains many important topics within its own. Except for three of the key topics covered, the others are internal matters; Contribution to the growth of the economy, society and local development at our flight destinations are important external issues. We will continue to take our priority determination process further in the coming years by receiving feedback from our stakeholders on the issues we have mentioned under the material issues. Sustainable Development Goals priority topics;

- Increasing fuel efficiency and reducing emissions to combat climate change
- Waste management
- Resource efficiency
- Fleet modernization
- Sustainable Aviation Fuel
- Noise Management
- Carbon Pricing
- Sustainable Catering
- Single Use Plastics
- Customer satisfaction
- Access to products and services
- Training
- Flight Safety
- Flight Security
- Supporting biodiversity
- Human rights and employee development
- Employee health and safety and well-being
- Contribution to economic development

- Diversity and gender equality
- Innovation and entrepreneurship
- Contribution to Local Development at Our Destinations
- Responsible Supply Chain Management
- Our Contributions to Economic and Social Development
- Financial Performance

## C0.2

**(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 2020	December 31 2020	No	<Not Applicable>

## C0.3

**(C0.3) Select the countries/areas for which you will be supplying data.**

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

## 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
Board-level committee	In our Incorporation, the Sustainability Committee, whose members are composed of executives at the Turkish Airlines Senior Management level, has been established. The Sustainability Committee aims to create value by ensuring that the economic, social and environmental sustainability aspects carried out in different processes within our Incorporation are performed in a linked cycle. With this; responsibility for Turkish Airlines' impact on the economy, environment and society rests with the Board of Directors and the Executive Committee. In this regard, as in the company's performance in all matters, The Board of Directors and the Executive Committee are primarily responsible for monitoring and evaluating climate change management. The Sustainability Committee reports directly to the CEO. Turkish Airlines Sustainability Committee is chaired by Assistant General Manager (Financial). Members of the Sustainability Committee assume the vice chairmanship of the Assistant General Manager (Human Resources). Committee members consist of the titles of Assistant General Manager (Marketing and Sales) - Sustainability Committee Member, Quality Assurance President - Sustainability Committee Member, Corporate Sustainability Management Manager (Sustainability Committee Secretariat). Therefore, the Chairperson of the Sustainability Committee is on the Board of Directors, the highest decision-making body of the Incorporation. Sustainability Committee convenes at least once every quarter of the year, additionally it reconvenes in the cases where important issues arise regardless of time. In general, it convenes at least 4 times a year. Management Evaluation Meetings are held every 2 weeks as Senior Management meetings. At these meetings, decisions regarding sustainability are also taken. For instance; the decision to "evaluate cooperation for a biofuel flight in a line to be determined in a way that is certified and will not impose any obligation on our partnership" is one of the current decisions taken at the Senior Management Meeting on this subject.
Chief Executive Officer (CEO)	Our efforts to combat the climate change is followed at the highest level by our CEO and our CEO is an executive member of Board of Directors. We consider climate change as a strategic issue that requires full integration into business processes and decision-making mechanisms, and consider reducing our impact in this context as a fundamental component of our sustainability understanding. For this purpose, a Sustainability Committee was established in our Incorporation, the members of which are Turkish Airlines Senior Management level executives. With this, the responsibility for the impacts of Turkish Airlines on economy, environment and society lies with the Board of Directors and the Executive Committee. Sustainability Committee reports directly to the CEO. As examples of the decisions approved by our CEO are to "evaluate cooperation for a biofuel flight in a line to be determined in a way that is certified and will not impose any obligation on our partnership".
Chief Financial Officer (CFO)	Our Incorporation considers climate change as a strategic issue that requires full integration into business processes and decision-making mechanisms, and considers reducing our impacts in this content as a fundamental component of our sustainability approach. For this purpose, a Sustainability Committee was established in our Incorporation, the members of which are Turkish Airlines Senior Management level executives. Turkish Airlines Sustainability Committee is chaired by Assistant General Manager (Financial). Members of the Sustainability Committee assume the vice chairmanship of the Assistant General Manager (Human Resources). Committee members consist of the titles of Assistant General Manager (Marketing and Sales) - Sustainability Committee Member, Quality Assurance President - Sustainability Committee Member, Corporate Sustainability Management Manager (Sustainability Committee Secretariat). Therefore, the Chairperson of the Sustainability Committee is on the Board of Directors, the highest decision-making body of the Incorporation. Sustainability Committee reports directly to the CEO. Our CFO is not only the Chairperson of our Sustainability Committee, but also a board member of our company. Responsibilities of the Chairperson of our Sustainability Committee are summarized as follows: Reporting the important issues discussed in the Sustainability Committee to the Top Management and Senior Management and submitting the decisions taken to the approval of Top Management and Senior Management. Turkish Airlines Sustainability Committee Chairperson Assistant General Manager (Financial) ensures that the Company's risk management policies (within the scope of sustainability and all risks) are determined, necessary arrangements are made and systematically reviewed within the scope of the committee's purposes. By acting upon the policies of Incorporation, does the necessary work to achieve all its goals, and makes the decision on the acceptability of all risks that arise in the process s/he manages. As examples of the decisions involved and approved by our CFO are to "evaluate cooperation for a biofuel flight in a line to be determined in a way that is certified and will not impose any obligation on our partnership".

**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>	We integrate our sustainability approach into our business models in order to leave a more livable World to the future generations. On this purpose, we work to extend the policies in this field to all units of our Incorporation from the management level to the lowest level with our organizational structure. Putting a sustainable, transparent and accountable management into the focus of its operations, the Incorporation has established a Sustainability Committee, whose members are Turkish Airlines Senior Management. With this, the responsibility for the impacts of Turkish Airlines on economic, environmental and social lies with the Board of Directors and the Executive Committee. Sustainability Committee reports directly to the CEO. The Sustainability Committee aims to create value by ensuring that the economic, social and environmental sustainability aspects carried out in different processes within our Incorporation are aligned and performed in linked among them. The Chairperson of the Sustainability Committee is responsible for reporting the meeting minutes in the Sustainability Committee to the Top Management and Senior Management. Additionally, submitting the decisions taken in the Sustainability Committee to the approval of Top Management and Senior Management are of Chairperson's responsibility. Turkish Airlines Sustainability Committee is chaired by CFO-Assistant General Manager (Financial). Assistant General Manager (Human Resources) is the vice chairperson of the Committee. Members of the Sustainability Committee are as follows: Assistant General Manager (Marketing and Sales) - Sustainability Committee Member, Quality Assurance President - Sustainability Committee Member, Corporate Sustainability Management Manager (Sustainability Committee Secretariat). Therefore, the Chairperson of the Sustainability Committee is on the Board of Directors, the highest decision-making body of the Incorporation. Accordingly, the Chairperson is able to ensure that strategy such as reviewing and guiding strategy, major plans of action, annual budgets, business plans, overseeing major capital expenditures, setting objectives, targets and monitoring the performance are in line with climate change mitigation and adaptation. The Sustainability Committee convenes at least once every quarter of the year, additionally, when important issues arise, it reconvenes regardless of time. It meets at least 4 times annually.

## 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
Sustainability committee	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Chief Financial Officer (CFO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Other, please specify (Senior Vice President)	<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).**

At Turkish Airlines, the sustainability issues are handled by the Sustainability Committee, consisting of the representatives of Senior Management, in a way that they include climate change. Turkish Airlines Sustainability Committee is chaired by Assistant General Manager (Financial). Members of the Sustainability Committee assume the vice chairmanship of the Assistant General Manager (Human Resources). Committee members consist of the titles of Assistant General Manager (Marketing and Sales) - Sustainability Committee Member, Quality Assurance President - Sustainability Committee Member, Corporate Sustainability Management Manager (Sustainability Committee Secretariat). The Sustainability Committee reports directly to the CEO.

The responsibility for the impacts of Turkish Airlines on economy, environment and society lies with the Board of Directors and the Executive Committee. In this regard, as in the company's performance in all matters, The Board of Directors and the Executive Committee are primarily responsible for monitoring and evaluating climate change management. The Chairperson of the Sustainability Committee is the executive responsible for reporting the important issues discussed in the Sustainability Committee to the Top Management and Senior Management and submitting the decisions taken to the approval of Top Management and Senior Management and is in charge of the Sustainability Committee meetings. The Sustainability Committee convenes at least once every quarter of the year, additionally, when important issues arise, it reconvenes regardless of time. It generally meets at least 4 times a year.

Senior Vice President manages the process of carrying out the activities intended for satisfying the national and international civil aviation standards and the requirements of the Quality Management System and Environmental Management System as well as certifying this satisfaction and ensuring its continuation. The position is responsible of reporting to the CEO &

**President on** any safety, security, compliance, quality, and environment incident, activity, or case in the Company, which is out of the acceptable limits.

The Sustainability Committee carries out its activities in order to determine, review and continuously improve the sustainability management strategy, sustainability policy, short, medium and long-term sustainability targets, and to decide on improvement projects that will increase the sustainability performance of Turkish Airlines. Within the framework of the proposals made by the Committee, all our relevant units plan their necessary work and carry out their work in line with this plan. We aim to develop and maintain our sustainability efforts in line with the United Nations Sustainable Development Goals, by developing them day by day, in line with the vision, mission and general strategy of our Incorporation, taking into account the expectations of our stakeholders and related parties, our impact on the supply chain and the environment, and integrating them into every field in which our Incorporation operates. Besides, our Sustainability efforts are focused on the following material issues with the participation of all relevant units of our Incorporation;

In the environmental field; Fleet modernization, climate change, fuel efficiency and greenhouse gas emissions, sustainable biofuel, sustainable catering, waste management, single-use plastics, resource efficiency, noise management, water management, carbon pricing, biodiversity

In the social field : Customer satisfaction, flight safety, flight security, innovation, employee health & safety and well-being, employee and management relations, human rights, diversity and gender equality, accessibility and disadvantaged passengers, corporate social responsibility, data and information security, training and capacity & career development, local community involvement, product responsibility

In the field of economic ; Financial performance, local development at destinations, contribution to economic development, responsible supply chain management.

In the field of governance; It can be listed as corporate governance, business ethics and ethical behavior, compliance with legislation, and risk management.

Expenditure on our fuel, energy and greenhouse gas emissions; Our operational expenses have an important place among our costs. Since, the aviation is an industry which is affected by international regulations and highly regulated, the regulations and costs in these items have significant risks and opportunities for us. It is of great importance that the Incorporation has an effective risk management strategy in order to control potential risks in the highly competitive aviation industry and to ensure sustainable growth. The risk committee gathered 6 times in 2020.

## 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)	Non-monetary reward	Other (please specify) (Fuel Saving)	We are sending "Thank you" letters to the Top 100 captains for each fleet in terms of fuel saving. Although not directly in line with the goal of reducing carbon emissions, 340 certificates of appreciation have been given so far for fuel savings. While, it is not considered as a routine practice, a certificate of appreciation is given to cockpit employees who support the reduction of carbon emissions by using less than planned fuel. As Turkish Airlines, we operate the hazard identification and risk management processes in the Safety Management System, including the safety reporting system, and aim to eliminate or reduce all risks to safety, including human factors, by dynamically monitoring the flight operation. Therefore, in order not to endanger the flight safety, no monetary incentive is given in return for the practices of the captains to reduce fuel consumption.
All employees	Monetary reward	Emissions reduction project Energy reduction project Efficiency project Efficiency target Behavior change related indicator Environmental criteria included in purchases	Employees may receive monetary incentive by the achievement of energy and consequently emission reduction, efficiency, behavioral change for savings. Our 3 actions incentivising all of our employees to participate and including the improvement of climate change performance are as follows: 1) A reporting system especially focusing on environmental issues, assessed by Quality Assurance Directorate. 2) Personal Proposal System: A campaign was held to raise environmental awareness through Feedy, the feedback application within our mobile application, which is one of our 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, emission efficiency and these proposals are evaluated by relevant departments. The selected welcomed proposals are deemed worthy to get a gold coin. 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 converted 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.). 3) Aiming to process all internal and external sources and turn them into output, our Corporate Innovation System consists of many complementary activities. "Idea Management", one of the most important components of our Corporate Innovation System, has been commissioned to activate the creative potential of our employees, the greatest asset of our Incorporation, and to increase their participation to innovation activities. Having a transparent sharing and rewarding structure, the idea management system enables all our employees to submit their valuable opinions and provides them with the opportunity to develop and realize projects and in return, to be rewarded for their efforts. Taking the interdepartmental coordination to the top level, this platform keeps serving for the purpose of utilizing all available opportunities and resolving all problems. Thanks to the idea management system; we create awareness on innovation, promote the innovation culture and raise innovation ambassadors.
Board/Executive board	Monetary reward	Emissions reduction target Energy reduction target Efficiency target Behavior change related indicator Environmental criteria included in purchases	According to macro and micro current financial conditions; Board of Directors may decide to deliver bonus and/or dividend to managerial positions of the company. As we are operating in aviation sector, our profitability is highly depending on our operating cost including energy (fuel & electricity) costs, which are our main source of emission (more than 99%) Therefore, the Board of Directors may receive monetary incentive by the achievement of energy and consequently emission reduction, efficiency, behavioral change for savings and more environmentally focus purchases. Responsibility for Turkish Airlines' impact on the economy, environment and society rests with the Board of Directors and the Executive Committee. The Chairperson of the Sustainability Committee is on the Board of Directors, the highest decision-making body of the Incorporation.
Chief Executive Officer (CEO)	Monetary reward	Energy reduction target Efficiency target Behavior change related indicator Company performance against a climate-related sustainability index	According to macro and micro current financial conditions; Board of Directors may decide to deliver bonus and/or dividend to managerial positions of the company. As we are operating in aviation sector, our profitability is highly depending on our operating cost including energy (fuel & electricity) costs, which are our main source of emission (more than 99%) Therefore, CEO may receive monetary incentive by the achievement of energy and consequently emission reduction, efficiency, behavioral change for savings and more environmentally focus purchases. Responsibility for Turkish Airlines' impact on the economy, environment and society rests with the Board of Directors and the Executive Committee. The Chairperson of the Sustainability Committee is on the Board of Directors, the highest decision-making body of the Incorporation.
Chief Financial Officer (CFO)	Monetary reward	Emissions reduction target Energy reduction target Efficiency target	The Sustainability Committee aims to create value by ensuring that the economic, social and environmental sustainability dimensions carried out in different processes within our Incorporation are carried out in a linked cycle. Our CFO is not only the Chairperson of our Sustainability Committee, but also a board member of our company. Responsibilities of the Chairperson of our Sustainability Committee are summarized as follows: It is to report the important issues discussed in the Sustainability Committee to the Senior Management and the Top Management, and to submit the decisions taken for the approval of the Senior Management and the Top Management.

**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 a highly regulated and both investments and technological improvements, investments need time according to other sectors, we define 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 -Obtaining the Primary Certificate within the scope of Presidency Zero Waste Project in Headquarters, Halkali Technology and Yenibosna buildings - 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 combustion of aviation fuel and new fleet may bring 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 -%2 reduction in electricity, natural gas and water consumption THY A.O makes concrete efforts to be included in Borsa Istanbul Sustainability Index and international sustainability indices (Dow Jones Sustainability Index, FTSE4Good, MSCI ESG Indices, etc.) In 2020, THY A.O 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. Our long term plans are as follows: -To meet at least 5% of the energy from renewable sources in our new buildings, -Introducing sustainable biofuel based on microalgae in 2025, - Reduction of 5% kg/ATK by 2025

**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 .

According to Risk Management Procedures of THY; any process, including climate-related risks which may bring financial risks, is classified as "HIGH RISK, if the impact affect the cost of the process more than 15%".

If we state it with our overall financial figures as examples, our financials for 2020 are as follows;

REVENUE 6.734 billion USD (2020)

EBITDA 1.481 billion USD (2020)

MARKET CAP 2.397 billion USD (2020),

15% of the above mentioned figures are as follows;

REVENUE 1.0101 billion USD

EBITDA 225,000,000 USD

MARKET CAP 359,550,000 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 is as "process" in our risk procedure.

As THY, we manage our economic, environmental, & social performance in a way that creates value & benefit" for all our stakeholders by including "sustainable development" among the focus of our business model. As 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 and market value. Many stakeholders such as our investors and customers may adversely or positively affected and these issues may create concern on them.

## C2.2

### (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 our Incorporation, the Sustainability Committee, whose members are composed of executives at the Turkish Airlines Senior Management level, has been established. The Sustainability Committee aims to create value by ensuring that the economic, social and environmental sustainability aspects carried out in different processes within our Incorporation are performed in a linked cycle. With this; Responsibility for Turkish Airlines' impact on the economy, environment and society rests with the Board of Directors and the Executive Committee. In this regard, as in the company's performance in all matters, The Board of Directors and the Executive Committee are primarily responsible for monitoring and evaluating climate change management. The Sustainability Committee reports directly to the CEO. Risks and also opportunities are assessed, monitored and evaluated in a multi-step and multi-disciplinary approach. Turkish Airlines Sustainability Committee is chaired by Assistant General Manager (Financial). Members of the Sustainability Committee assume the vice chairmanship of the Assistant General Manager (Human Resources). Committee members consist of the titles of Assistant General Manager (Marketing and Sales) - Sustainability Committee Member, Quality Assurance President - Sustainability Committee Member, Corporate Sustainability Management Manager (Sustainability Committee Secretariat). Therefore, the Chairperson of our Sustainability Committee is on the Board of Directors, which is the highest decision-making body of the Incorporation. Sustainability Committee convenes at least once every quarter of the year, additionally it reconvenes in the cases where important issues arise regardless of time. In general, it convenes at least 4 times a year. Management Evaluation Meetings are held every 2 weeks as Senior Management meetings. Within the scope of these meetings, decisions regarding sustainability are also taken. For instance; the decision to "evaluate cooperation for a biofuel flight in a line to be determined in a way that is certified and will not impose any obligation on our partnership" is one of the current decisions taken at the Senior Management Meeting on this subject.

#### Value chain stage(s) covered

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

TGS - Turkish Ground Services is one of our critical suppliers providing ground handling services at 9 airports, including the hub in Istanbul, where Turkish Airlines carries out its main operations. We care about the environmental measures and evaluations of our value chains (suppliers). As an example, as of the end of 2020, TS EN ISO 14001:2015 Environmental Management System and TS ISO 14064-1 Greenhouse Gas Calculation and Verification Management System Certificate were obtained by TGS at all stations where it serves us. TGS - Turkish Ground Services; - Takes the necessary measures to prevent environmental pollution at its source and to use energy and natural resources efficiently, - In order to control and minimize the effects of its activities on the environment, determine the environmental dimensions and start improvement works immediately, -Manage hazardous and non-hazardous wastes according to legal requirements, -Makes improvements in company activities to reduce greenhouse gas emissions, - Evaluates risks and opportunities to reduce the company's environmental impact.

## 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, 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. The Environmental Management System, which has been implemented in our Incorporation since 2013, continues to be carried out in 100% compliance with the requirements of TS EN ISO 14001:2015 Environmental Management System Standard. 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 authorized independent certification body. We fulfill all the necessary notifications under the EU ETS and follow the developments closely. For instance, in 2020, as THY, we accept the CORSIA requirements for carbon neutralization. As CORSIA stated, CORSIA offsetting requirements for 2021-2023 period will be calculating each year for the previous year and 2021-2023 period emission units will be offset in 2025 through the CORSIA implementation timeline. Additionally, since the emissions in 2020 will be very low due to the pandemic, there is debate on taking 2019 as the base year. The base year of the CORSIA bill is designed to be 2019-2020. Although not so clear, it will be clarified in the General Assembly to be held in 2022. 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. 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, an external audit (verification audit) was carried out in 2020. 16 QUALITEAM audits were carried out in 2020 and 18 QUALITEAM audits for the first 6 months in 2021 were carried out.
Emerging regulation	Relevant, always included	We are operating in a highly regulated sector and monitoring, contributing if possible, the emerging regulations. In order 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" has been drafted. THY assesses this regulation and its impact on its own actions. 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). Flights monitored and reported on the system during the period of 1 January - 31 December of the relevant year will be forwarded to an Independent Verifying Body through the system. The Verifying Body transmits both the emission report and the verification report to the DGCA via the system, according to the timetable specified within the scope of the Regulation. Our Incorporation 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. The regulation is expected to get into force in 2021. 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. With Partnership for Market Readiness (PMR) aiming to contribute to the efforts to reduce GHG emissions in developing countries, which are of great importance in the global fight against climate change, and to use market-based instruments effectively. The technical support program was implemented by the World Bank in 2011. Program; - Creating a platform for technical discussions on market mechanisms for abatement, - To support the capacity building activities of the implementing countries financed by developed countries and their pilot applications in this field. In 2013, Turkey was included in the program with 19 implementing countries. We closely follow the progress & meetings related to this project carried out by the Ministry of Environment and Urbanization are followed.
Technology	Relevant, always included	Thanks to the technological developments and investments, the reduction of carbon emissions are ensured and a 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 combustion of aviation fuel and new aircraft with up to date technology may bring considerable amount of energy and emission efficiency. As an example in 2020, our new generation B787-9 type wide-body aircraft continued to join our fleet, along with the A321 NEO aircraft, which provided an average of 15% fuel savings compared to their equivalent aircraft. The 787 Dreamliner passenger aircraft is characterized by the fact that composite materials are used to a large extent in its production and its fuselage is completely composite. Our Incorporation aims to keep the environmental effects of cargo transportation in addition to passenger transportation to a minimum level. In line with this commitment, with our Boeing 777F type aircraft which has started to join our Turkish Cargo fleet in 2018 and whose deliveries continue in 2020, when compared to previous generation cargo aircraft with similar capacity and range, 20% less emissions, 20% less environmental noise and 15%-20% fuel savings have been achieved.
Legal	Relevant, always included	Environmental legal regulations to which our Incorporation is subject is 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, 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 2020, 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 2020. For the EU ETS, an external audit (verification audit) was carried out in 2020. 16 QUALITEAM audits were carried out in 2020. On the other hand, we accept the CORSIA requirements for carbon neutralization in 2020. As CORSIA stated, CORSIA offsetting requirements for 2021-2023 period will be calculating each year for the previous year and 2021-2023 period emission units will be offset in 2025 through the CORSIA implementation timeline.
Market	Relevant, always included	Aviation industry is a competitive sector and practices on energy and also emissions with the current and emerging regulations & practices can provide significant competitive advantage in the market. The practices brought by the regulators can significantly affect the income, expense and profitability of the sector. The effects of climate change can affect the industry both positively and negatively. For instance, it can have an effect the industry as increase or decrease in travelling demand. Additionally, with the help of EU ETS and CORSIA market price risks for emission allowances are subject to increase so that affect the profitability.
Reputation	Relevant, always included	THY 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. Reputation of THY may affect both the investors and customers. Consequently, the market value and the revenue, profitability may be affected. The market value of THY as of year end of 2020 is 2.397 billion USD. If any reputational risk negatively impacts THY's market value by 1% as a result of investor exit, it will lead a decrease of approximately 23.97 million USD in the market value.
Acute physical	Relevant, always included	Changing weather conditions due to climate change can cause a flight to be cancelled. When all international routes are taken into account, an average of 123,000 USD revenue loss is expected with a round trip cancellation (in this calculation, 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, 210,00 USD is added to other lines as fixed + indirect costs. As a result, we can state that canceling a flight will cause a total loss of revenue of approximately 145,000 USD. When the same calculation is made for long lines, an income loss of 314,000 USD is expected (in this calculation, not only the remaining income on the line, but all travel income is taken into account). In order to take into account that the aircraft cannot be used effectively, 68,000 fixed + indirect costs are added to this amount. As a result, we can say that canceling a flight, especially for long lines, will cause a total loss of revenue of approximately 385,000 USD. In 2020, our new generation B787-9 type wide-body aircraft continued to join our fleet, along with the A321 NEO aircraft, which provided an average of 15% fuel savings compared to their equivalent aircraft. The 787 Dreamliner passenger aircraft is characterized by the fact that composite materials are used to a large extent in its production and its fuselage is completely composite. Thanks to this feature, the high humidity indoor environment provides higher comfort to the passengers. Our Incorporation aims to keep the environmental effects of cargo transportation in addition to passenger transportation to a minimum level. In line with this commitment, with our Boeing 777F type aircraft which has started to join our Turkish Cargo fleet in 2018 and whose deliveries continue in 2020, when compared to previous generation cargo aircraft with similar capacity and range, 20% less emissions, % less environmental noise and 15%-20% fuel savings have been achieved. At Turkish Airlines, application studies are carried out for each aircraft in order to obtain a Noise Certificate in accordance with national and international aviation requirements, and its updates are followed. With this certificate, which specifies the noise levels of aircraft, the airports comply with the noise level limits for landing and take-off.
Chronic 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 aircrafts with alcohol compounds to maintain flight safety of the fleet. Another problem that can occur with extreme weather conditions may also delay in departure and landing. This may indirectly lead to the use of more fuel and, consequently, to an increase in carbon emissions. As an example from 2020, we have experienced extreme weather conditions 177 times that needs to apply de-icing/anti-icing and our company-wide overall cost of de-icing/anti-ice implementation is 3,166,454 USD.

**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**

Chronic physical	Changes in precipitation patterns and extreme variability in weather patterns
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**Primary potential financial impact**

Increased indirect (operating) costs

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

<Not Applicable>

**Company-specific description**

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 aircrafts with alcohol compounds to maintain flight safety of the fleet.

**Time horizon**

Short-term

**Likelihood**

Very likely

**Magnitude of impact**

Low

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

3166454

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

<Not Applicable>

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

<Not Applicable>

**Explanation of financial impact figure**

For deicing and anti-icing implementations; we use two types of liquids in Turkey and the liquids can be called as Type 1, Type 2. The real usage volumes and the procurement prices are used to calculate the financial impact in 2020. In 2020, for 177 flights deicing/anti-icing is implemented and its real cost determined is 3,166,454 USD.

**Cost of response to risk**

3166454

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

In 2020, the total cost of anti-icing/de-icing at all stations, including domestic and international, is 3,166,454 USD. We assumed that the cost of response and the financial impact is the same, since the expenditures sourced from the diminishing the impact, which is de-icing or anti-icing is also the cost of this actualized risk. In 2020, for 177 flights deicing/anti-icing is implemented and its real cost determined is 3,166,454 USD.

**Comment**

**Identifier**

Risk 2

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

Direct operations

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

Current regulation	Carbon pricing mechanisms
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**Primary potential financial impact**

Increased indirect (operating) costs

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

<Not Applicable>

**Company-specific description**

Turkish Airlines has been monitoring and reporting the emissions of its flights within this scope since 2019. As of 2021, the emissions produced above the determined level will need to be offset, and this may increase our operational costs. This situation poses a medium-sized risk, especially as it is forecasted that 2019 traffic levels will be exceeded in the next few years.

**Time horizon**

Short-term

**Likelihood**

Virtually certain

**Magnitude of impact**

Medium

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

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

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

912251.72

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

999483.6

**Explanation of financial impact figure**

In 2020, we have purchased and off-settled an equivalent of 13,883 carbon credits to comply with EU ETS regulation and the cost was 912,251.72 USD. If we assume that our 2021 emissions will be 1,69% more than our 2020 emissions, and if we assume that the emission credit fee for 2021 will be at most 60 euros, we will have a cost of 999,483.6 USD

**Cost of response to risk**

426839

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

We have a business unit focusing on the minimization of fuel expenditures in THY, and its year 2020 expenditures is around 426,839 USD.

**Comment**

EU -ETS expenditures after annual verifications is made to the Authority - DEHSt at the end of each year. We have made 13,883 EUA payment for 13,883 ton CO2. As per 28.06.2021 EUA Spot price is 55.62 € Our expenditure is approximately 912,251.72 USD with current EUA prices in this manner. Price reference is given in below. <https://www.eex.com/en/market-data/environmental-markets/spot-market> If we assume that our 2021 emissions will be 1,69% more than our 2020 emissions, and if we assume that the emission credit fee for 2021 will be at most 60 euros, we will have a cost of 999,483.6 USD ( We used 1 Euro = 1.18 USD at our calculations)

**Identifier**

Risk 3

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

Direct operations

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

Reputation	Other, please specify (Loss of investor)
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**Primary potential financial impact**

Other, please specify (Decreased market value)

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

&lt;Not Applicable&gt;

**Company-specific description**

THY 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. Reputation of THY, including climate related issues, may affect the investors. Consequently, the market value may potentially be affected.

**Time horizon**

Medium-term

**Likelihood**

Very unlikely

**Magnitude of impact**

Medium

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

119560880

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

&lt;Not Applicable&gt;

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

&lt;Not Applicable&gt;

**Explanation of financial impact figure**

The market value of THY as of year end of 2020 is 2.397 billion USD. If any reputational risk negatively impacts THY's market value by 5% as a result of investor exit, it will lead a decrease of approximately 119.85 million USD in the market value.

**Cost of response to risk**

257595

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

Particularly, our Corporate Sustainability Management Team in THY puts effort on the management of sustainability within our Incorporation and its value chain. The Team not only conducts the sustainability throughout our Incorporation, but also puts its best effort to enhance the value chain in terms of sustainability as much as possible. Their efforts also includes to keep the reputation and market value of THY. Our Corporate Sustainability Management Team's actualized budget in 2020 is 257,595 USD including employee remuneration and consultancy fees on sustainability.

**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) 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**

Other, please specify (Use of re-use)

**Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

**Company-specific description**

Our Incorporation has reduced the overall weight of the aircraft, resulting in fuel savings, thanks to the recent updates in inflight material shipments and the reduced loading weight through manual tracking.

**Time horizon**

Long-term

**Likelihood**

Very likely

**Magnitude of impact**

Low

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

50000

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

<Not Applicable>

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

<Not Applicable>

**Explanation of financial impact figure**

According to the blanket and earphone reduction practices, a saving of fuel which costs 50,000 USD is calculated as annual fuel saving with these examples. Only intercontinental flights of 8 hours or more were calculated.

**Cost to realize opportunity**

0

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

We continuously trying to improve our energy efficiency during flight. Decreasing the amount and weight of inflight materials, which causes less jet fuel consumption and consequently less GHG emission. Examples of our projects in 2020 are presented here regarding minimizing the amount and the weight of the materials loaded on the aircraft. Regarding the materials loaded on the aircraft: - 65,759 kg of blankets were not loaded on ER East flights. -12.113 kg of earphones were not loaded on ER East flights. -Loading numbers of YC Blankets on ER flights were reduced by 10%, with the number of departure passengers being +30 + return configuration instead of departure configuration + return configuration. (Approximately 20kg per flight). -For BC Blankets, the loading criterion of departure configuration + return configuration was adjusted as departure passengers +4 + return configuration. There is not an additional cost of investment and operation for these examples. Vice versa, it leads to operational efficiency and less work is needed as a result of the new procedure. Therefore, the cost is assumed as "0" USD.

**Comment**

**Identifier**

Opp2

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

Direct operations

**Opportunity type**

Products and services

**Primary climate-related opportunity driver**

Shift in consumer preferences

**Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

**Company-specific description**

If the consumers' preference increases with the help of increase in consumer awareness on climate change and the effect of Turkish Airlines' efforts on conducting sustainable business.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

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

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

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

67340000

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

134680000

**Explanation of financial impact figure**

If we assume that the shift in consumer preferences lead an increase of 1 to 2% in its 2020 revenues, the financial impact will be in the range of between 67,340,000 and 134,680,000 USD, where the total revenue is 6,734,000,000 USD in 2020.

**Cost to realize opportunity**

814972

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

Particularly, our Corporate Sustainability Management Team in THY puts effort on the management of sustainability within our Incorporation and its value chain. The Team not only conducts the sustainability throughout our Incorporation, but also puts its best effort to enhance the value chain in terms of sustainability as much as possible. Their efforts also includes to keep the reputaion and market value of THY. Our Corporate Sustainability Management Team's actualized budget in 2020 is 257,595 USD including employee remuneration and consultancy fees on sustainability. On the other hand, almost all of our emissions are sourcing from jet fuel emissions and we have a business unit focusing on the minization of fuel expenditures in THY, and its 2020 expenditures is 426.839 USD. The cost of these 2 departments are 684.434 USD.

**Comment**

We believe that making environmental investments creates a positive impact on THY's reputation and its stakeholders both nationally and internationally. Every work done in this context has positive effect for THY. It creates positive areas open to evaluation for customers and investors.

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**Identifier**

Opp3

**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**

As fuel efficiency is ensured, there will be a decrease in the fuel area, which has a significant impact on THY's expenses, and thus its costs. Thus, it can offer more economical transportation and shipping opportunities. This not only reduces emissions, but also makes it stand out in competition. This not only reduces emissions, but also enables THY to stand out from the competition. The amount of measurable savings achieved by the optimization of our flight operation, dispatch, ground operation and aircraft technical maintenance activities was 22,760 tons of fuel and 71,695 tons of CO2 emission reduction. With 1 Kg Fuel Saving prevent 3.15 Kg CO2 Emissions.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

16380000

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

<Not Applicable>

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

<Not Applicable>

**Explanation of financial impact figure**

In 2020, flight fuel cost of THY is 1,638,000,000 USD. If we assume that by ensuring fuel efficiency, our fuel expenses are reduced by 1%, then an amount of 16,380,000 USD saving is achieved in total fuel costs.

**Cost to realize opportunity**

557377

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

We have a business unit (Fuel Management) focusing on the minization of fuel expenditures in THY, and its 2020 expenditures is 426.839 USD

**Comment**

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### C3. Business Strategy

#### C3.1

**(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?**

Yes, and we have developed a low-carbon transition plan

#### C3.1a

**(C3.1a) Is your organization's low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?**

	Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
Row 1	No, and we do not intend it to become a scheduled resolution item within the next two years	Especially the last 5 years showed that this concept has been increasingly developed Countries and authorities continue to take official steps and shape up the roadmap. Turkish Airlines continues to develop its low-carbon transition plan according to different perspectives as road maps take shape.

#### C3.2

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

Yes, quantitative

#### C3.2a

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

Climate-related scenarios and models applied	Details
Nationally determined contributions (NDCs)	As Turkish Airlines, we regularly conduct PESTLE and SWOT analyzes in order to follow the industry closely and take necessary actions in a timely manner. We determine our strategies and create an investment plan according to the outputs of these analyzes. According to the Intended Nationally Determined Contribution (INDC) statement submitted in 2015, Turkey will be taking steps towards the global 2° C target by reducing its business as usual (BAU) greenhouse gas emissions by 21% in the 2021-2030 period. This INDC may be revised according to emerging conditions. 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). Although the agreements to which our country is a party are not directly binding on us, we take environmental sustainability into consideration when creating our own strategies. We see it as our primary responsibility to act in a way that will support the goal of reducing carbon emissions of the aviation industry by 50% in 2050, compared to 2005, set by the International Air Transport Association (IATA). Our fuel saving policy is at the core of our strategy to combat climate change and reduce greenhouse gas emissions. We aim to reduce both costs and emissions by increasing our fuel efficiency. In this context, we optimize our flight activities, invest in new technologies, and give priority to aircraft with high fuel efficiency while adding new aircraft to our fleet. As a result of all these efforts, we have prevented 340 thousand tons of carbon emissions with approximately 107 thousand tons of fuel savings in 3 years since 2018, when new generation aircraft started to join the fleet. In addition, we support the project of biofuel production from microalgae carried out by Boğaziçi University for the production of biofuel as an alternative fuel. We monitor and report our emissions from intra-Europe flights within the scope of the European Union Emission Trading System (EU-ETS), and our emissions from all international flights since 2019, within the scope of the CORSIA. Within the scope of the Zero Waste Regulation, we carry out our waste management activities by adopting the principles of waste management hierarchy. We care about the energy efficient construction of our buildings in accordance with the Energy Performance Regulation. (Ex: LEED Certified) In addition, we aim to use a minimum of 5% renewable energy sources in our new buildings. Our future target: As Turkish Airlines, we aim to reduce the fuel consumed per ton km by 5% until 2025, by normalizing the ATK (available ton-km) weight and range.

#### 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 cooperate mission and strategy of our Incorporation, we are also developing our sustainability strategy. 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. For this, we make applications to reduce cabin material and catering weights. In this context, we take many initiatives to reduce carbon footprint by increasing fuel efficiency within the scope of protecting the environment and competing climate change. For this, we make practices to reduce cabin material and catering weights. 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. We recycle our textile waste into textile products such as pillowcases and blankets through licensed recycling companies and reuse them on our aircraft. We use bio-packaging in our products and develop projects to reduce catering waste. 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). The risk of airline customers shifting to different transportation methods due to climate change concerns requires us to keep our short and medium haul flight strategies up-to-date. We encourage our suppliers as part of our environmental and climate policy. In this regard, recycling and more efficient use of resources and etc. creates opportunities in our products and services, as well as we also consider the risk of affecting the unit costs of these products.
Supply chain and/or value chain	Yes	Turkish Airlines the concerns of its stakeholders, social expectations and the effects on the supply chain takes into account in its strategies. In this respect, it 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 society while creating its strategies. While carrying out these studies, it aims to create an ethical, environmental, social and sustainable ecosystem. 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 select its suppliers in this context while taking into account the components of the supply chain. It is aimed to choose the most appropriate supplier in the purchase of new generation engines and aircraft with plans taking into account the features such as market dynamics and routing. Turkish Airlines uses the "Supplier Evaluation Procedure", which was put into use in 2021, where 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 trainings 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, 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 Turkey. When the project is completed, we plan to use the biofuel, which will be obtained from sustainable sources, in our flights after the engine tests to be carried out by Turkish Technic. There is no supplier in Turkey 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. THY's 2020 Operating Budget figures are as follows; Corporate Innovation and Projects Department budget is 1,288,620 USD, R&D Project budget is 7,431,270 USD and Total Budget is 8,719,890 USD.
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. We reduce fuel consumption with applications such as single engine taxi and electronic flight bag (EFB). In addition to aircraft development projects, we give priority to aircraft with high fuel efficiency while adding new aircraft to our fleet. As a result of all these efforts, we saved 22,760 tons of fuel in 2020 and prevented the emission of 71,695 tons of carbon emissions into the atmosphere. 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 Direct costs Indirect costs Capital expenditures Capital allocation Access to capital Assets	Revenues: Environmental impacts, climate-related risks and opportunities are always taken into account in the creation of Turkish Airlines business strategies and financial planings Turkish Airlines is in a reputable position in this sense. A positive or negative change in this reputation may directly affect Turkish Airlines' revenues. For example, a 0.1% change in Turkish Airlines' revenues due to its corporate reputation regarding climate-related sensitivities corresponds to approximately 13.229 million USD based on its pre-pandemic 2019 revenues. However, we consider the level of risk of a negative change in our corporate reputation as low. 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. 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 high financial impact but such an impact is not expected for our Incorporation in the short and medium term. 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 airplanes 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 number of participants will increase over time with new countries to join. Turkish Airlines has been monitoring and reporting the emissions of its flights within this scope since 2019. As of 2021, the emissions produced above the determined level will need to be offset, and this may increase our operational costs. This situation poses a medium-sized risk, especially as it is forecasted that 2019 traffic levels will be exceeded in the next few years. Capital expenditures: As it 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 remain 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.

**C3.4a**

**(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).**

Adopting the Corporate Governance Principles of Turkish Airlines as a corporate culture, it acts in accordance with the national legal requirements, other national and international conditions, and the rules of the aviation industry that it is obliged to comply with, and develops methods that go beyond national and international rules when applicable. We work to identify risks that may endanger the continuity of all its activities, products and services, to early identify opportunities that may support its development, to determine the actions for the identified risks and opportunities, to implement these actions and to manage risks and opportunities. Turkish Airlines is highly aware of the impact of the aviation industry on climate change. In this direction, it acts with the awareness of the importance of the work done to reduce the carbon footprint. It supports the initiatives related to fuel efficiency in order to eliminate or reduce the factors that may have an impact on the climate change and takes measures to reduce greenhouse gas emissions. It leads the R&D works of sustainable biofuel. It acts with the awareness that the resources in the world are not endless and with the responsibility of leaving a conscientiously protected environment to the future generations. It takes measures to prevent the noise pollution and waste generation. With its life-cycle approach, it prioritizes the use of sustainable products and supports recycling, thus minimizing waste. It also motivates its suppliers and subsidiaries in line with this approach. It places importance to the protection of biodiversity and natural ecosystem environments.

Turkish Airlines provides all its customers with the highest possible standards in flight safety and flight security in a most effective way. On this purpose, we design, implement and supervises all processes with the same sensitivity, from the simplest to the most complex operations, for the sustainable development.

## 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?**

Both absolute and intensity targets

### C4.1a

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**(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.**

**Target reference number**

Abs 1

**Year target was set**

2020

**Target coverage**

Site/facility

**Scope(s) (or Scope 3 category)**

Scope 2 (location-based)

**Base year**

2019

**Covered emissions in base year (metric tons CO<sub>2</sub>e)**

43043

**Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)**

100

**Target year**

2021

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

5

**Covered emissions in target year (metric tons CO<sub>2</sub>e) [auto-calculated]**

40890.85

**Covered emissions in reporting year (metric tons CO<sub>2</sub>e)**

35205

**% of target achieved [auto-calculated]**

364.193945589294

**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 (including target coverage)**

Our target is to decrease our Scope 2 emissions by %5 until the end of 2021 in comparison with 2019 with the help of our emission efficiency projects and consuming renewable electricity energy target.

---

**Target reference number**

Abs 2

**Year target was set**

2020

**Target coverage**

Company-wide

**Scope(s) (or Scope 3 category)**

Scope 1

**Base year**

2019

**Covered emissions in base year (metric tons CO2e)**

17822444

**Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)**

99.12

**Target year**

2021

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

0.49

**Covered emissions in target year (metric tons CO2e) [auto-calculated]**

17735114.0244

**Covered emissions in reporting year (metric tons CO2e)**

9048188.31

**% of target achieved [auto-calculated]**

10047.2439499914

**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 (including target coverage)**

It covers our jet fuel emissions, which is 99.6% of our overall emissions.

---

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**

2020

**Target coverage**

Company-wide

**Scope(s) (or Scope 3 category)**

Other, please specify (Fuel Saving/Efficiency)

**Intensity metric**

Other, please specify (Turkish Airlines use the (Fuel\*100 / ATK) parameter as fuel efficiency KPI. Fuel: Consumed actual trip fuel as kilogram [KG] ATK: Available Ton Kilometer = Autorised Traffic Load (ATL) x Great Circle Distance (GCD) )

**Base year**

2020

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

18.36

**% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure**

99

**Target year**

2021

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

0.49

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

18.270036

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

0.49

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

0

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

18.36

**% of target achieved [auto-calculated]**

0

**Target status in reporting year**

Replaced

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

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

**Target ambition**

<Not Applicable>

**Please explain (including target coverage)**

Turkish Airlines use the (Fuel\*100 / ATK) parameter as fuel efficiency KPI. Fuel: Consumed actual trip fuel as kilogram [KG] ATK: Available Ton Kilometer = Autorised Traffic Load (ATL) x Great Circle Distance (GCD) Fuel efficiency has been adversely affected due to pandemic conditions in 2020; Increased APU usage for air conditioning and electricity needs Increase in the amount of carried potable water to ensure required hygienic conditions etc. On the average, each kilogram of jet kerosene fuel we used saving leads a prevention of 3.15 kgCO2e emission.

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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

---

**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: absolute or intensity**

Absolute

**Target type: energy carrier**

Electricity

**Target type: activity**

Production

**Target type: energy source**

Renewable energy source(s) only

**Metric (target numerator if reporting an intensity target)**

Percentage

**Target denominator (intensity targets only)**

<Not Applicable>

**Base year**

2020

**Figure or percentage in base year**

0

**Target year**

2022

**Figure or percentage in target year**

1

**Figure or percentage in reporting year**

0

**% of target achieved [auto-calculated]**

0

**Target status in reporting year**

New

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

Yes, it is also a part of decreasing absolute Scope 2 emissions.

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

No, it's not part of an overarching initiative

**Please explain (including target coverage)**

We care about the energy efficient construction of our buildings in accordance with the Energy Performance Regulation. (Ex: LEED Certified) We are pledged to decrease our emissions by energy & emission reduction projects and activities. We officially had a decision to use a minimum of 5% renewable energy in our buildings that will be constructed/purchased from now on.

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**Target reference number**

Low 2

**Year target was set**

2020

**Target coverage**

Site/facility

**Target type: absolute or intensity**

Intensity

**Target type: energy carrier**

Electricity

**Target type: activity**

Consumption

**Target type: energy source**

Renewable energy source(s) only

**Metric (target numerator if reporting an intensity target)**

Percentage

**Target denominator (intensity targets only)**

Other, please specify (Electricity consumption from non-renewable sources )

**Base year**

2020

**Figure or percentage in base year**

0

**Target year**

2030

**Figure or percentage in target year**

2.1

**Figure or percentage in reporting year**

0

**% of target achieved [auto-calculated]**

0

**Target status in reporting year**

New

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

yes

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

No, it's not part of an overarching initiative

**Please explain (including target coverage)**

Based on the decision to use 5% renewable energy in new buildings will be consumed, the entry was made with the assumption that new buildings will be built by 2030.

**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*	18	79428.51
Implementation commenced*	0	0
Implemented*	18	72311.71
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**

Other, please specify	Other, please specify (Fuel Saving)
-----------------------	-------------------------------------

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

79428.51

**Scope(s)**

Scope 1

**Voluntary/Mandatory**

Voluntary

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

12450400

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

Please select

**Estimated lifetime of the initiative**

Ongoing

**Comment**

In terms of sustainability, we have prevented the emission of approximately 1.84 million tons of carbon emissions with the Fuel Efficiency Project we have been implementing since 2008. Our flight efficiency improved by about 20% compared to where we started. Our practices within the Fuel Efficiency Project are; 1.Flight Op.: Optimizing the use of Auxillary Power Unit (APU) on the ground, Single engine taxi, Reduced flap configuration at take off, Respect the departure and departure times in flight plans, Climb, cruise, descent and final approach procedures, Reduced flap configuration at landing, Idle reverse using at landing, Monitoring of extra fuel demands 2.Catering and Ground Operations: Reducing cabin material weights, Reducing pantry, Controlled and statistical potable water 3.Flight Plan and Dispatcher Implementations: New optimized flight plan system, Route optimization, (Performance based Navigation) procedures, Alternate airport selection, Extra fuel monitoring, 3% Contingency Fuel ERA, ZFW (zero fuel weight) monitoring, Statistical taxi fuel, Statistical APU fuel;4.Maintenance and Technical Items: Engine washes regularly, Monitoring aircraft aerodynamics, Engine and APU standards, APU maintenance costs, Check aircraft maintenance (changes to winglets and sharks);5.Aircraft Weight: Cabin equipment, Catering weights, Potable water monitoring, Removing spare tires, Lighter container, pallet and net weights, Lighter magazine weights, Flight center of gravity man.

**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 2020, and the Environmental Management System Certificate continued to be valid as a result of the audits performed. Adopting the principle of "continuous improvement", our Incorporation provided participants in the IATA Environmental Assessment (IEnvA) Management System Program implemented by The International Air Transport Association (IATA) for airline companies in 2020 in order to strengthen the environmental management system with the requirements specific to the aviation industry.
Dedicated budget for energy efficiency	Turkish Airlines provides the necessary resources of human, technology, infrastructure, finance etc for energy efficiency and to reduce the use of natural resources. In this context, 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. 2021-2025 fleet investment amount is \$13.7 billion USD. (This is the list price of the aircraft.) Total Amount of Aircraft Procurement for 2020: 4.86 billion USD. (This is the list price of the aircraft)
Dedicated budget for low-carbon product R&D	THY prioritizes protecting the environment 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. It monitors greenhouse gas emissions regularly, reports and shares its results with all its stakeholders. It sets targets for emission reduction by taking the necessary measures to reduce its emissions, develops action plans to achieve these targets and regularly monitors their status. As Turkish Airlines, we plan to reach the target of halving the carbon dioxide emissions, in 2050 compared to 2005 as set by IATA, of which we are a member. In this direction, our TUBITAK (The Scientific and Technological Research Council of Turkey) Project titled "Microalgae Based Sustainable Bio-Jet Fuel Project (MICRO-JET)", which we applied jointly with Boğaziçi University, 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 engine 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 Turkey (TUBITAK)
Internal incentives/recognition programs	Personal Proposal System: A campaign was held to raise environmental awareness through Feedy, the feedback application within our mobile application, which is one of our 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, emission efficiency and these proposals are evaluated by relevant departments. The selected welcomed proposals are deemed worthy to get a gold coin. Along with our individual suggestion system, our suggestions were rewarded in 2017, 2018 and 2019. A total of 1086 people were given gold at this rate. 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 conveyed 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.). As THY, we carry out studies to increase the awareness of our employees about environmental issues and climate change, and we use trainings, seminars and related information tools in this field. Within this scope, 22,459 people received ISO 14001 Environmental Management System and Waste Management training and 2522 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.

**C4.5****(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?**

Yes

**C4.5a****(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.****Level of aggregation**

Product

**Description of product/Group of products**

Miles&Smiles Digital Membership card is a free product for members, can be accessed via Turkish Airlines mobile application, and also has all the advantages of former physical card. (total of 4 tiers)

**Are these low-carbon product(s) or do they enable avoided emissions?**

Avoided emissions

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**

Other, please specify (None)

**% revenue from low carbon product(s) in the reporting year**

0

**% of total portfolio value**

&lt;Not Applicable&gt;

**Asset classes/ product types**

&lt;Not Applicable&gt;

**Comment**

Contributing to our Company's efforts to reduce greenhouse gas emissions (GHG), supporting our Company's "Zero- Waste Project" and optimizing its financial savings the Miles&Smiles Digital membership cards project has an important role.

**Level of aggregation**

Product

**Description of product/Group of products**

Hygiene sets have been started to be loaded with bags instead of 1.2 KG bags. (On some flights before, 8 bags were loaded.) In addition, hygiene kits; Some of the trips are hand-delivered. Reducing the number of loadings is not suitable for the need for hygiene products due to the pandemic, which is in high demand, but only FFP2 mask loadings have been reduced. Loadings of baby diapers have been removed. Loadings of sanitary pads have been removed. In-flight weight is reduced by presenting products such as Cologne, YC Lavatory Set and Disinfectant in plastic bottles instead of glass. Calculations exclude primary cost and reuse cost.

**Are these low-carbon product(s) or do they enable avoided emissions?**

Avoided emissions

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**

Other, please specify (None)

**% revenue from low carbon product(s) in the reporting year****% of total portfolio value**

<Not Applicable>

**Asset classes/ product types**

<Not Applicable>

**Comment**

Hygiene sets have been started to be loaded with bags instead of 1.2 KG bags. (On some flights before, 8 bags were loaded.) In addition, hygiene kits; Some of the trips are hand-delivered. Reducing the number of loadings is not suitable for the need for hygiene products due to the pandemic, which is in high demand, but only FFP2 mask loadings have been reduced. Loadings of baby diapers have been removed. Loadings of sanitary pads have been removed. In-flight weight is reduced by presenting products such as Cologne, YC Lavatory Set and Disinfectant in plastic bottles instead of glass. Calculations exclude primary cost and reuse cost.

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**Level of aggregation**

Product

**Description of product/Group of products**

With the recent updates in inflight material shipments and reduced loading with manual follow-ups, 65,759 kg of blankets were not loaded on ER East flights. Loading numbers of YC Blankets on ER flights were reduced by 10%, with the number of departure passengers being +30 + return configuration instead of departure configuration + return configuration. (Approximately 20kg per trip). For BC Blankets, the loading criterion of departure configuration + return configuration was adjusted as departure passengers +4 + return configuration. In addition, products such as unopened Blankets, Headphones, etc. are checked and reused in operation. Calculations exclude primary cost and reuse cost.

**Are these low-carbon product(s) or do they enable avoided emissions?**

Avoided emissions

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**

Other, please specify (None)

**% revenue from low carbon product(s) in the reporting year**

**% of total portfolio value**

<Not Applicable>

**Asset classes/ product types**

<Not Applicable>

**Comment**

With the recent updates in inflight material shipments and reduced loading with manual follow-ups, 65,759 kg of blankets were not loaded on ER East flights. Loading numbers of YC Blankets on ER flights were reduced by 10%, with the number of departure passengers being +30 + return configuration instead of departure configuration + return configuration. (Approximately 20kg per trip). For BC Blankets, the loading criterion of departure configuration + return configuration was adjusted as departure passengers +4 + return configuration. In addition, products such as unopened Blankets, Headphones, etc. are checked and reused in operation. Calculations exclude primary cost and reuse cost.

---

**Level of aggregation**

Product

**Description of product/Group of products**

12,113 kg of headphones were not loaded on ER East flights, with the latest updates made in inflight material shipments and reduced loading with manual follow-ups. In addition, materials that are heavy in weight, such as headphones, are kept in stock at ER stations. This reduces weight for single leg loading. Our pilot work continues to provide optional service at the door instead of hand-delivering INT YC earphones to the passenger inside the aircraft, and to reduce the number of loadings by reducing consumption. Earphone loading numbers have been reduced in this context. Over 80,000 KG of plastic waste was prevented by the recycling of unused INT YC earphones. In addition, the re-operation of the products after the disinfection process and their use by the passenger indirectly cause a reduction in greenhouse gas emissions. Calculations exclude primary cost and reuse cost.

**Are these low-carbon product(s) or do they enable avoided emissions?**

Avoided emissions

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**

Other, please specify (None)

**% revenue from low carbon product(s) in the reporting year**

0.1

**% of total portfolio value**

<Not Applicable>

**Asset classes/ product types**

<Not Applicable>

**Comment**

12,113 kg of headphones were not loaded. 80,000 KG of plastic waste was prevented by the recycling of unused INT YC earphones. ER (extended range) flight are performed with wide body aircrafts. 1kg of weight costs 78\$ for a Boeing 777. We saved 944,814\$ from the headphones and 6,240,000\$ from the plastic bags. Totally we saved 7,184,814\$.

---

**Level of aggregation**

Product

**Description of product/Group of products**

Bio-plastic bags, which are fully conforming to TS EN 13432 standard "Packaging- Requirements for packaging recoverable through composting and biodegradation" and which are of biodegradable nature, were used instead of the plastic packaging bags of the earphones and blankets. In order to minimize generation of plastic waste which cause greater damages to the nature, bioplastic bags, which are fully conforming to TS EN 13432 standard "Packaging- Requirements for packaging recoverable through composting and biodegradation" and which are of biodegradable nature, started to be used instead of the plastic bags we used to utilize while packaging the earphones and blankets offered to our passengers. Calculations exclude primary cost and reuse cost.

**Are these low-carbon product(s) or do they enable avoided emissions?**

Avoided emissions

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**

Other, please specify (None)

**% revenue from low carbon product(s) in the reporting year**

**% of total portfolio value**

<Not Applicable>

**Asset classes/ product types**

<Not Applicable>

**Comment**

In order to minimize generation of plastic waste, bioplastic bags, which are fully conforming to TS EN 13432 standard "Packaging- Requirements for packaging recoverable through composting and biodegradation" and which are of biodegradable nature, started to be used instead of the plastic bags we used to utilize while packaging the earphones and blankets offered to our passengers. As of January 2018, which is the beginning of the practice, instead of plastic bags; a total of 13,264,500 compostable bags were used in the packaging of business and economy headphones, and a total of 300,806.3 kg of compostable bags were used in the packaging of business and economy class blankets. Calculations exclude primary cost and reuse cost.

---

**Level of aggregation**

Company-wide

**Description of product/Group of products**

While flying through a destination, having a additional stopovers instead of having direct flights generate more GHG emissions due to the additional landing, takeoff and possible increase in the route.

**Are these low-carbon product(s) or do they enable avoided emissions?**

Avoided emissions

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**

Other, please specify (Internal methodology)

**% revenue from low carbon product(s) in the reporting year**

93.3

**% of total portfolio value**

<Not Applicable>

**Asset classes/ product types**

<Not Applicable>

**Comment**

While flying through a destination, having a additional stopovers instead of having direct flights generate more GHG emissions due to the additional landing, takeoff and possible increase in the route. As THY, we are one of the leading airlines providing direct flight to high number of destinations. Additionally, our ratio of direct flight compared to flights with stopovers is very high. Our revenues from flights are as follows (Revenues from Cargo is not included, and charters are included into direct flights); Passengers from Direct Flights: 4.210.351.854 USD Passengers from Stopover Flights: 306.387.038 USD Passengers from Charter Flights: 39.379.743 USD TOTAL: 4.556.118.635 USD As a result; 93.3% of our revenue comes from direct flights, which emits less GHG in comparison to flight with stopovers.

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## C5. Emissions methodology

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### C5.1

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**(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).**

**Scope 1**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

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

17834081.11

**Comment**

Scope 1 emissions are resulted from jet kerosene combustion at flights, natural gas combustion for heating, trigeneration unit; diesel oil stationary combustion generators; gasoline and diesel oil mobile combustion for on road & off road vehicles; leakages from air conditioners (HVAC systems), chiller units, refrigerators, water dispensers, current breakers and fire extinguishing systems. In 2020, our Scope 1 greenhouse gas emissions decreased by 49% compared to 2019 and became 9,092,921 tCO2e . In addition to our energy and emission reduction activities implemented, the main factor in this decrease is the cancelation of flights due to Covid-19.

**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**

We purchase and consume electricity energy from the grid. Scope 2 emissions are resulted from use of natural gas for generation of electricity and heating by a third party provider. In 2020, Scope 2 greenhouse gas emissions decreased by 18.2% compared to 2019 and became 35,205 tCO2e (Scope 2). The main factor in this decrease is the cancelation of flights due to Covid-19.

**Scope 2 (market-based)**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

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

0

**Comment**

In Turkey, due to regulations there is no Private Purchasing Agreements as in Europe. Electricity is supplied from the grid. Therefore; we use location based Scope 2 emissions.

**C5.2**

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**(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.**

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

ISO 14064-1

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

Other, please specify (ICAO Airport Air Quality Manuel, TEIAS, Turkish Electricity Transportation & Distribution Company Electricity Emission Factors, Aircraft Ground Energy Systems/6.1.AGES Benefits)

**C5.2a**

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**(C5.2a) Provide details of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.**

Scope 2 emission factors and calculation methodologies:

Scope 2, electrical emissions are calculated with multiplying the activity data (in kWh) with the emission factor within the scope of the CO2 calculation methodology. For emission factors; TEIAS 2017-2018-2019 electricity data was used as a source. You can access these emission factors via the link below.

<https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletim-istatistikleri>

400 Hz emissions are calculated according to the usage time. "Aircraft Ground Energy Systems/6.1.AGES Benefits" data is used for usage time information (as minute constant).

ICAO Airport Air Quality Manuel, TEIAS, Turkish Electricity Transportation & Distribution Company Electricity Emission Factors, Aircraft Ground Energy Systems/6.1.AGES Benefits

## 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)

9092920.73

##### Start date

<Not Applicable>

##### End date

<Not Applicable>

##### Comment

Scope 1 emissions are resulted from jet kerosene combustion at flights, natural gas combustion for heating, trigeneration unit; diesel oil stationary combustion generators; gasoline and diesel oil mobile combustion for on road & off road vehicles; leakages from air conditioners (HVAC systems), chiller units, refrigerators, water dispensers, current breakers and fire extinguishing systems. 99.6% of our Gross Global Scope 1 emissions is sourced from combustion of jet kerosene fuel for aircrafts. In the future, in 2021, we project that our absolute amount of Scope 1 emissions will raise as the effect of pandemic will decrease.

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

### C6.3

---

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

##### Reporting year

##### Scope 2, location-based

35205.27

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

<Not Applicable>

##### Start date

<Not Applicable>

##### End date

<Not Applicable>

##### Comment

Scope 2 emissions are resulted by purchased electricity from grid, natural gas for heating purchased from another supplier and Ground Power Unit (GPU & 400 Hz systems), where we prefer to get electricity from jet way when the aircraft is park position for energy and emission efficiency.

### C6.4

---

#### (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

### Metric tonnes CO2e

544.27

### Emissions calculation methodology

Water consumption are calculated under this section. For water consumption both tap water and bottled water is considered and ISO 14064-3 methodology is used. The emission factors for consumed water are gathered from Defra/DECC GHG reporting factors.

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

100

### Please explain

Although 99.12 % of our Scope 1 and Scope 2 emissions are caused by our jet kerosene fuel consumption, we monitor the amount of consumed water and tap water and we calculated emissions, are reduced by this issue.

## Capital goods

### Evaluation status

Relevant, not yet calculated

### Metric tonnes 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

Since 99.12% of our Scope 1 and Scope 2 emissions come from our jet kerosene fuel consumption, we have prioritized managing this emission source to reduce our overall greenhouse gas emissions. Since Turkish Airlines is an aviation company, the emissions evaluated in this context mostly originate from the aircraft purchased. Emissions from the production of purchased aircraft are difficult to calculate and these emission sources contribute a small percentage of the emissions compared to emissions are resulted from jet fuel. Therefore, calculations are planned to be made in the future.

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

### Evaluation status

Not relevant, explanation provided

### Metric tonnes 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

Since 99.12% of our Scope 1 and Scope 2 emissions come from our jet kerosene fuel consumption, we have prioritized managing this emission source to reduce our overall greenhouse gas emissions. Compared to the amount of emissions from jet kerosene, it needs extensive working hours to calculate the emissions involved, and these emission sources contribute a small percentage of the emissions. Therefore, the cost-benefit of data collection is very high.

## Upstream transportation and distribution

### Evaluation status

Not relevant, explanation provided

### Metric tonnes 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

Since 99.12% of our Scope 1 and Scope 2 emissions come from our jet kerosene fuel consumption, we have prioritized managing this emission source to reduce our overall greenhouse gas emissions. Compared to the amount of emissions from jet kerosene, it needs extensive working hours to calculate the emissions involved, and these emission sources contribute a small percentage of the emissions. Therefore, the cost-benefit of data collection is very high.

## Waste generated in operations

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

502.33

### Emissions calculation methodology

DEFRA methodology is used to calculate the GHG Inventory for non-hazardous waste and waste water. In order to calculate emissions, are resulted from hazardous waste and packaging waste, the corresponding conversion factors published by US EPA are used.

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

100

### Please explain

Although 99.12 % of our Scope 1 and Scope 2 emissions are caused by our jet kerosene fuel consumption, we monitor the amount of waste and waste water and we calculated emissions, are reduced by this issue. In 2020, 1,203,812 kg of non-hazardous waste, 35,376 kg of hazardous and 6,900 kg of packaging waste were sent for recycling. Also, our total water consumption for all campuses in 2020 is 644,800,97 m<sup>3</sup> and the amount of drinking water is 450 m<sup>3</sup>. Apart from these, 7.2 tons of paper was saved in 2020.

## Business travel

### Evaluation status

Not relevant, explanation provided

### Metric tonnes 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

As we are a company providing air travel services, almost all of Turkish Airlines employees' business air travel, which has the significant proportion of business travel sourced emissions in general, is provided by Turkish Airlines's own fleet. Therefore, these emissions are included into our Scope 2 emissions inventory. As a result, there is no business air travel emissions are relevant for Scope 3 emissions sourced from business air travel. Consequently, this Scope 3 category is not relevant.

## Employee commuting

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

9037.58

### Emissions calculation methodology

To estimate the emissions from employee commuting, initially the total distance of each route is calculated. Then, the emission factor for appropriate vehicle is taken from Defra/DECC GHG reporting factors.

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

100

### Please explain

Turkish Airlines provides employee commuting to its employees for their well-being. These emissions were calculated by multiplying value of the total kilometers traveled by the services in 2020 by the emission factor which is obtained from DEFRA 2020.

## Upstream leased assets

### Evaluation status

Relevant, not yet calculated

### Metric tonnes 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

Turkish Airlines are leased upstream assets such as, buildings and aircrafts, however; emissions are released from leased assets are included in Scope 1 emissions.

## Downstream transportation and distribution

### Evaluation status

Not relevant, explanation provided

### Metric tonnes 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

Cargo aircrafts are used for the downstream transportation and distribution of products. Therefore, emissions from this source are included in the total Scope 1 emissions.

#### Processing of sold products

**Evaluation status**

Not relevant, explanation provided

**Metric tonnes 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**

We provide transportation services for passengers and freight. Therefore, we have no product and there is no processing of our sold products and it is not relevant for us.

#### Use of sold products

**Evaluation status**

Not relevant, explanation provided

**Metric tonnes 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**

We provide transportation services for passengers and freight. Therefore, we have no product and there is no emissions for use of sold products and it is not relevant for us.

#### End of life treatment of sold products

**Evaluation status**

Not relevant, explanation provided

**Metric tonnes 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**

We provide transportation services for passengers and freight. Therefore, we have no product and there is no emissions for end of life treatment of sold products and it is not relevant for us.

#### Downstream leased assets

**Evaluation status**

Not relevant, explanation provided

**Metric tonnes 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**

Ratio of our technical department's carbon emissions to our total emissions is: 0,136045%

#### Franchises

**Evaluation status**

Not relevant, explanation provided

**Metric tonnes 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**

We provide transportation services for passengers and freight. We have no franchises. Therefore, there is no emissions for our franchises and it is not relevant for us.

**Investments**

**Evaluation status**

Not relevant, explanation provided

**Metric tonnes 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**

We provide transportation services for passengers and freight. We have no investments. Therefore, there is no emissions for our investments and it is not relevant for us.

**Other (upstream)**

**Evaluation status**

Not relevant, explanation provided

**Metric tonnes 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**

We provide transportation services for passengers and freight. We have no other (upstream) emissions and consequently there is no other (upstream) emissions for our investments and it is not relevant for us.

**Other (downstream)**

**Evaluation status**

Not relevant, explanation provided

**Metric tonnes 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**

We provide transportation services for passengers and freight. We have no other (downstream) emissions and consequently there is no other (downstream) emissions for our investments and it is not relevant for us.

**C6.7**

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**(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**

0.001356

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

9128126

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

6734000000

**Scope 2 figure used**

Location-based

**% change from previous year**

0.31

**Direction of change**

Increased

**Reason for change**

This value was 0.001351 in 2019, which means 0.3% increase. Eventhough, 2020 is the year of pandemic and airline industry is one of the most effected sectors. We did not lost the emission per revenue efficiency about the same. We project in 3 years time our intensity figure will decrease sharply.

---

**Intensity figure**

318.408

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

9128126

**Metric denominator**

full time equivalent (FTE) employee

**Metric denominator: Unit total**

28668

**Scope 2 figure used**

Location-based

**% change from previous year**

47.47

**Direction of change**

Decreased

**Reason for change**

In 2020, our intensity figure was 606.19 tCO2e/FTE per full time equivalent employee. 2020 is the year of the pandemic and the airline industry is one of the most affected sectors, therefore; this density figure is extremely decreased by 47.47%.

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C-TS6.15

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**(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**

0.0005

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

9128126

**Metric denominator: unit**

t.km

**Metric denominator: unit total**

18255484826

**% change from previous year**

13.75

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

This breakdown represents Turkish Airlines's progress towards the airline industry's goal of improving fuel efficiency. Although, our ATK (Available ton kilometer) value was 30,835,106,087 which means 40.8% decrease in 2019, our total emissions are decreased by 48.94%. Thanks to our fuel efficiency efforts, this breakdown decreased by 13.75% compared to last year.

**ALL**

**Scopes used for calculation of intensities**

Report Scope 1 + 2

**Intensity figure**

0.0005

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

9128126

**Metric denominator: unit**

t.km

**Metric denominator: unit total**

18255484826

**% change from previous year**

13.75

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

This breakdown represents Turkish Airlines's progress towards the airline industry's goal of improving fuel efficiency. Although, our ATK (Available ton kilometer) value was 30,835,106,087 which means 40.8% decrease in 2019, our total emissions are decreased by 48.94%. Thanks to our fuel efficiency efforts, this breakdown decreased by 13.75% compared to last year.

**C7. Emissions breakdowns**

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**C7.1**

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

Yes

**C7.1a**

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**(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	9024544.28	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	1779.25	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	66597.19	IPCC Fifth Assessment Report (AR5 – 100 year)

**C7.2**

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Turkey	9092920.73

**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	9048188.313
Terminals	22641.91
Departments for Cargo Activities	18938.73
Offices (sales locations, technical units, training centers, warehouse)	1121.46
Headquartes	696.25
Ground operations (on road&off road vehicles)	1334.07

**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)	9092824.6	41.263844	28.705559
Ankara	86.677	40.124	32.9992
Izmir	9.448	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)	9049522.38
Stationary combustion (Heating, generators, and others)	7470.56
Fugitive emissions (Refrigerator, chiller, current breaker, air conditioning, cold chambers, fire extinguishers)	35927.79

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	9092920.73	<Not Applicable>	All (100%) of our gross global Scope 1 emissions is sourced from Transport Services Activities, sourced from mobile combustion of jet kerosene in our aviation activities.

**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)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Turkey	35205.27	0	15260.08	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	305.69	0
Offices (sales locations, technical units, training centers, warehouse)	32266.63	0
Headquartes	0	0
GPU (Ground Power Unit) & 400 Hz	2622.28	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)	34603.26	0
Ankara	482.86	0
Izmir	119.16	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	29000.22	0
Central heating with natural gas	3582.78	0
400 Hz Consumption	192.38	0
Ground Power Unit (GPU) Usage (Domestic)	280.69	0
Ground Power Unit (GPU) Usage (International)	2149	0

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

**(C-CE7.7IC-CH7.7IC-CO7.7IC-MM7.7IC-OG7.7IC-ST7.7IC-TO7.7IC-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	2622.07	0	This figure includes the GHG emissions of 400Hz electricity consumption of our aircrafts and electricity consumption from the electricity generated by the GPU units.

**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?**

This is our first year of reporting, so we cannot compare to last year

**C8. Energy**

**C8.1**

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

More than 15% but less than or equal to 20%

**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	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
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	34946068.21	34946068.21
Consumption of purchased or acquired electricity	<Not Applicable>	0	58607.07	58607.07
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	0	35004675.28	35004675.28

**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	Yes
Consumption of fuel for the generation of heat	No
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.**

**Fuels (excluding feedstocks)**

Jet Kerosene

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

34886814.2

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

0

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

34886814.2

**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

**Emission factor**

0.2594

**Unit**

metric tons CO2e per MWh

**Emissions factor source**

Emission Factors are from IPCC AR 5 Vol 2 Table 3.6.4 & Table 3.6.5

**Comment**

99.12% of our Scope 1 & 2 GHG Emissions are sourced from jet kerosene fuel used in our aircrafts. 100% of our aircrafts are using jet kerosene.

**Fuels (excluding feedstocks)**

Natural Gas

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

53247.21

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

0

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

26342.69

**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**

26904.51

**Emission factor**

0.2026

**Unit**

metric tons CO2 per MWh

**Emissions factor source**

Emission factors are taken from IPCC AR5 Commercial V2Ch2

**Comment**

Natural gas is used in heating and trigeneration system. 2,804,087 m3 of natural gas is used in trigeneration for the generating 10,845 MWh of electricity.

---

**Fuels (excluding feedstocks)**

Diesel

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

5049.26

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

190.09

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

4859.18

**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

**Emission factor**

0.2689

**Unit**

metric tons CO2e per MWh

**Emissions factor source**

Emission factors are taken from IPCC AR5 Commercial V2Ch2

**Comment**

Diesel fuel is used in company cars and generators.

---

**Fuels (excluding feedstocks)**

Motor Gasoline

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

31

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

1.17

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

29.83

**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

**Emission factor**

0.2593

**Unit**

metric tons CO2e per MWh

**Emissions factor source**

Emission factors are taken from IPCC AR5 Commercial V2Ch2

**Comment**

Motor gasoline is used in company cars, on&off road vehicles and our generator in Ankara Airport.

---

**Fuels (excluding feedstocks)**

Liquefied Natural Gas (LNG)

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

926.52

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

0

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

926.52

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

&lt;Not Applicable&gt;

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

&lt;Not Applicable&gt;

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

0

**Emission factor**

0.2189

**Unit**

metric tons CO2e per MWh

**Emissions factor source**

Emission factors are from IPCC AR5 Commercial V2Ch2

**Comment**

We are using LNG as stationary combustion for heating purposes.

**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	10845.22	10845.22	0	0
Heat	34918972.43	34918972.43	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

**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**

0.156

**Metric numerator**

Other, please specify (Kilograms of fuel)

**Metric denominator**

t.km

**Metric numerator: Unit total**

2874903200.34

**Metric denominator: Unit total**

18255484826

**% change from last year**

14.25

**Please explain**

This figure represents the kg of jet fuel consumed per available ton-km flown by Turkish Airlines' mainline aircraft. Comparing to last year, our both ATK (Available ton kilometer) value and total consumed fuel are decreased by 40.8% and 49.2% respectively. Thanks to our fuel efficiency efforts, this metric decreased from 0,1819 to 0.156 which means 14.25% decrease.

**Activity**

Aviation

**Metric figure**

0.0005

**Metric numerator**

Other, please specify (tCO<sub>2</sub>e)

**Metric denominator**

t.km

**Metric numerator: Unit total**

9128126

**Metric denominator: Unit total**

18255484826

**% change from last year**

-13.75

**Please explain**

This metric represents Turkish Airlines's progress towards the airline industry's goal of improving fuel efficiency. Although, our ATK (Available ton kilometer) value was 30,835,106,087 which means 40.8% decrease in 2019, our total emissions are decreased by 48.94%. Thanks to our fuel efficiency efforts. Therefore, this ratio of tCO<sub>2</sub>e/ATK in 2020 decreases %13,75 compared to 2019 (passenger and cargo flights).

---

**Activity**

Aviation

**Metric figure**

0.00059

**Metric numerator**

Other, please specify (tCO<sub>2</sub>e)

**Metric denominator**

t.km

**Metric numerator: Unit total**

6077600.39

**Metric denominator: Unit total**

10163225377.4

**% change from last year**

-2.9

**Please explain**

This figure represents the ton CO<sub>2</sub>e emissions per available ton km for only passenger flights flown by Turkish Airlines' mainline aircraft. Thanks to our fuel efficiency efforts, this ratio of tCO<sub>2</sub>e/ATK in 2020 decreases %2,9 compared to 2019 (passenger flights only).

---

**Activity**

Aviation

**Metric figure**

0.00367

**Metric numerator**

Other, please specify (tCO<sub>2</sub>e)

**Metric denominator**

t.km

**Metric numerator: Unit total**

2970587.92

**Metric denominator: Unit total**

8092259448.35

**% change from last year**

-5.77

**Please explain**

This figure represents the ton CO<sub>2</sub>e emissions per available ton km for only cargo flights flown by Turkish Airlines' mainline aircraft. Thanks to our fuel efficiency efforts, this ratio of tCO<sub>2</sub>e/ATK in 2020 decreases %5,77 compared to 2019 (cargo flights only).

---

## C9. Additional metrics

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### C9.1

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

**Description**

Energy usage

**Metric value**

5.2

**Metric numerator**

Total energy use (kWh)

**Metric denominator (intensity metric only)**

Revenue (USD)

**% change from previous year**

0.12

**Direction of change**

Decreased

**Please explain**

Our energy use in 2019 and 2020 are 68,846,738 MWh and 35,004,675 MWh respectively. A particular ratio of energy (99.8%) is sourced from combustion of jet kerosene during our aviation activities. Our total revenue in 2019 and 2020 are 13,229,000,000 USD and 6,734,000,000 USD respectively. The metric, which is energy use per revenue, is 5.20 kWh/USD.

---

**Description**

Waste

**Metric value**

1203.81

**Metric numerator**

Amount of non-hazardous waste in tons

**Metric denominator (intensity metric only)****% change from previous year**

3.68

**Direction of change**

Decreased

**Please explain**

Last year our total non-hazardous waste amount was 1249 tonnes. In 2020 our amount of non-hazardous waste is 1,203,812 kilograms which is decreased by 3.68% compared to 2019.

---

**Description**

Waste

**Metric value**

6.9

**Metric numerator**

Weight of packaging waste in tons

**Metric denominator (intensity metric only)****% change from previous year**

96

**Direction of change**

Decreased

**Please explain**

Last year packaging waste sent for recycling was 174 tons. The amount of generated packaging waste is excessively decreased by 96% which is to 6.9 tons in 2020.

---

**Description**

Waste

**Metric value**

35.97

**Metric numerator**

Weight of hazardous waste in tons

**Metric denominator (intensity metric only)****% change from previous year**

76

**Direction of change**

Decreased

**Please explain**

Last year hazardous waste sent to companies with relevant collection license. This amount is decreased by 76% which is to 35.97 tons in 2020.

---

**Description**

Other, please specify (water usage)

**Metric value**

644800.97

**Metric numerator**

m3 - volume of water used

**Metric denominator (intensity metric only)**

**% change from previous year**

0.82

**Direction of change**

Increased

**Please explain**

As we moved to the new airport in 2020, our working areas have become bigger. Therefore, there was a slight increase in water consumption.

**C-T09.3/C-TS9.3**

**(C-T09.3/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 aircrafts)

**Metric figure**

14

**Metric unit**

Other, please specify (% of fleet)

**Explanation**

Our fleet is one of the youngest in Europe with 363 aircraft and an average fleet age of 8.4 years. Also, we continued to join our fleet of B787-9 type new generation wide-body aircraft, along with A321 NEO aircraft, which provide an average of 15% fuel savings compared to equivalent aircraft. Thanks to our fleet renewal efforts, the number of our energy efficient aircraft reached 54 in 2020 and the ratio of fuel efficient aircrafts to total fleet is %14.9.

**Activity**

Aviation

**Metric**

Fleet adoption

**Technology**

Other, please specify (Winglets or sharklets on mainline aircraft)

**Metric figure**

77

**Metric unit**

Other, please specify (% of eligible aircraft equipped)

**Explanation**

282 number of Turkish Airlines' aircraft have been re-equipped with fuel-saving winglets beyond the basic design which means 77% of total fleets. Installed sharklets and winglets causes 2-3% increase in fuel efficiency and reduction in greenhouse gas emissions.

**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-T09.6/C-TS9.6**

**(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-T09.6/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	Thanks to the investments we have made in technology, we have taken our monitoring and measurement capability at every stage of our flights to an advanced level, together with the fuel management information system software (Fuel Management Information System), which we have implemented since 2017. At this point, together with FMIS, we have provided payload supply instead of fuel, by improving especially in the sectors where we had a restriction in route optimization before. Our TUBITAK priority field project titled "Microalgae Based Sustainable Bio-Jet Fuel Project (MICRO-JET)", which we applied with Bogazici University, was accepted. Within the scope of the project, pilot production of synthetic biokerosene using hydrotreated fatty acids (HEFA) and hydrothermal liquefaction (HTL) methods from microalgae has started. 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 our flights. Similar to almost all companies operating in aviation industry, almost all of emissions are sourcing from our flight emissions. We use jet kerosene as fuel and developing an energy source or fuel with low or zero GHG emission has crucial importance on mitigating emissions throughout our industry. Therefore, we put great importance on developing an alternative fuel for aviation industry. With the motivation of taking a pioneering step on this purpose, we involved in a multi-party project with our fuel supplier Istanbul Grand Airport - IGA. However, it seems that there is only one supplier, we have only a few number of particular domestic jet fuel suppliers and as mentioned above, finding a solution for mitigating flight emissions has crucial and significant importance in climate change mitigation activities. As Turkish Airlines, we have a strong intention to develop and consume Sustainable Aviation Fuel (SAF) throughout our flights to contribute to climate emergency. With this motivation, we started a project with our fuel supplier Istanbul Grand Airport. The budget of our Corporate Innovation and Projects Directorate's budget is 1.288.620 USD in 2020 The budget allocated for the R&D studies carried out within this scope is 7,431,270 USD.

**C-T09.6a/C-TS9.6a**

**(C-T09.6a/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**

Please select

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

7431270

**Comment**

@ESG Average % of total R&D investment over the last 3 years'den kasit son üç yılın ortalama R&D investment/total investment değeri mi? ADVANCED FUEL MANAGEMENT SYSTEM (FMIS) Fuel Management Information System Our new fuel management system was put into service at the end of 2016. This new system enables to calculate the cost of ATC operations (orders received while in the air, deviations from the flight plan, etc.) and to evaluate the alternatives together with these cost items measured. In addition, it enables us to closely monitor important factors affecting fuel consumption such as any deviations in the flight plan and the actual flight route, altitude and speed changes, and to take action in potential areas in a very short time.

**Activity**

Aviation

**Technology area**

Other, please specify (Biofuel Development)

**Stage of development in the reporting year**

Basic academic/theoretical research

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

Please select

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

**Comment**

Our TUBITAK priority field project titled "Microalgae Based Sustainable Bio-Jet Fuel Project (MICRO-JET)", which we applied with Bogazici University, was accepted. Within the scope of the project, pilot production of synthetic biokerosene using hydrotreated fatty acids (HEFA) and hydrothermal liquefaction (HTL) methods from microalgae has started. 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 our flights. Thus, Turkish Airlines will be 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 TUBITAK (Scientific and Technological Research Council of Turkey).

**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	No third-party verification or assurance

**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**

EY-ETS\_DEHTST-Full Report.pdf

EU-ETS\_DEHTS Summary.pdf

**Page/ section reference**

@THY: Eksik kısımlar kontrol edilmelidir. Seçimler uygunluk açısından değerlendirilmelidir. @ESG!!! Reasonable assurance için verilerin doğrulandığına dair THYye gönderilen mail tarafınıza iletilmiştir.

**Relevant standard**

European Union Emissions Trading System (EU ETS)

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

100

---

**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**

THY AO SERA GAZI DOĞRULAMA İNGİLİZCE BELGE.pdf

Sera Gazı Beyanı Doğrulama Açıklaması-EN.pdf

THY\_TSE\_CDP\_Statement\_2020.pdf

**Page/ section reference**

@THY: Eksik kısımlar kontrol edilmelidir. Seçimler uygunluk açısından değerlendirilmelidir. @ESG!!! Reasonable assurance için doğrulama raporu elimize ulaştı ve tarafınıza iletildi.

**Relevant standard**

Other, please specify (Turkish Standards Institute)

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

100

---

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Please select

**Type of verification or assurance**

Please select

**Attach the statement**

THY CORSIA VERIFICATION REPORT.pdf

**Page/ section reference**

**Relevant standard**

Other, please specify (CORSIA)

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

---

C10.1b

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**(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**

**Page/ section reference**

@THY: Relevant Standart seçilmedi. Opsiyonları kontrol edebilirsiniz. @ESG!!! Reasonable assurance için TSEnin gönderdiği doğrulama raporu tarafınıza iletilmiştir.

**Relevant standard**

Other, please specify (Turkish Standards Institute)

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

100

**C10.2**

**(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
C5. Emissions performance	Year on year change in emissions (Scope 1)	TS ISO 14064-1:2007 Annex 16, Volume IV, first Edition, ETM Doc 9501, Volume IV, second edition and SHT-CORSIA	TS ISO 14064-1:2007: Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals Annex 16, Volume IV, first Edition, ETM Doc 9501, Volume IV, second edition and SHT-CORSIA (CORSIA Regulation in force in TURKEY at the period of verification).
C5. Emissions performance	Year on year change in emissions (Scope 2)	TS ISO 14064-1:2007 Annex 16, Volume IV, first Edition, ETM Doc 9501, Volume IV, second edition and SHT-CORSIA	TS ISO 14064-1:2007: Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals Annex 16, Volume IV, first Edition, ETM Doc 9501, Volume IV, second edition and SHT-CORSIA (CORSIA Regulation in force in TURKEY at the period of verification).
C5. Emissions performance	Year on year change in emissions (Scope 1 and 2)	TS ISO 14064-1:2007 Annex 16, Volume IV, first Edition, ETM Doc 9501, Volume IV, second edition and SHT-CORSIA	TS ISO 14064-1:2007: Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals Annex 16, Volume IV, first Edition, ETM Doc 9501, Volume IV, second edition and SHT-CORSIA (CORSIA Regulation in force in TURKEY at the period of verification).
C6. Emissions data	Other, please specify (Revenue)	@THY IFRS?? @ESG!!! Bu hücreler için nasıl bir veri bekleniyor?	Sc1 + Sc2 / revenue
C9. Additional metrics	Other, please specify (Revenue)	@ESG!!! Bu hücreler için nasıl bir veri bekleniyor?	

**C11. Carbon pricing**

**C11.1**

**(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**

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

EU ETS

Switzerland ETS

Other ETS, please specify (UK - ETS)

## C11.1b

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(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**  
0.15

**% of Scope 2 emissions covered by the ETS**  
0.39

**Period start date**  
January 1 2020

**Period end date**  
December 31 2020

**Allowances allocated**  
13835

**Allowances purchased**  
1168

**Verified Scope 1 emissions in metric tons CO<sub>2</sub>e**  
9092920.72

**Verified Scope 2 emissions in metric tons CO<sub>2</sub>e**  
35205.2774

**Details of ownership**  
Other, please specify (Flights we operated)

### Comment

### Switzerland ETS

**% of Scope 1 emissions covered by the ETS**  
0

**% of Scope 2 emissions covered by the ETS**  
0.0013

**Period start date**  
January 1 2020

**Period end date**  
December 31 2020

**Allowances allocated**  
48

**Allowances purchased**

**Verified Scope 1 emissions in metric tons CO<sub>2</sub>e**  
9092920.72

**Verified Scope 2 emissions in metric tons CO<sub>2</sub>e**  
35205.2774

**Details of ownership**  
Other, please specify (Flights we operated)

### Comment

% of Scope 1 emissions covered by the ETS : 0.00000527883

### Other ETS, please specify

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

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

**Period start date**

**Period end date**

**Allowances allocated**

**Allowances purchased**

**Verified Scope 1 emissions in metric tons CO<sub>2</sub>e**

**Verified Scope 2 emissions in metric tons CO<sub>2</sub>e**

**Details of ownership**

**Comment**

## C11.1d

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

We had sent the Emission Monitoring Plan to UK- ETS . The flights between EU and UK in year 2020 is reported to EU-ETS. However, UK flights of the year 2021 will be reported to UK-ETS authority after the year 2021 is ended.

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**C11.2**

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

Yes

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**C11.2a**

**(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.**

**Credit origination or credit purchase**

Credit purchase

**Project type**

CO2 usage

**Project identification**

1,168 CERs purchased and converted to EUAs

**Verified to which standard**

Other, please specify (EU - ETS)

**Number of credits (metric tonnes CO2e)**

1168

**Number of credits (metric tonnes CO2e): Risk adjusted volume**

1168

**Credits cancelled**

Not relevant

**Purpose, e.g. compliance**

Compliance

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**C11.3**

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

Yes

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**C11.3a**

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

**Objective for implementing an internal carbon price**

Other, please specify (To fulfill our obligations towards Authorities (i.e. DEHSt))

**GHG Scope**

Scope 1

Scope 2

**Application**

Flights between Europe, Switzerland and United Kingdom

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

56

**Variance of price(s) used**

EEX spot market prices is announced in below address: <https://www.eex.com/en/market-data/environmental-markets/spot-market/#%7B%22snippetpicker%22%3A%22EEX%20EUA%20Spot%22%7D>

**Type of internal carbon price**

Offsets

**Impact & implication**

EUA Carbon credits are purchased in order to offset carbon emissions within the scope of EU-ETS and CH-ETS.

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**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

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**

Run a campaign to encourage innovation to reduce climate impacts on products and services

**% of suppliers by number**

1

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

19

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

0

**Rationale for the coverage of your engagement**

Similar to almost all companies operating in aviation industry, almost all of emissions are sourcing from our flight emissions. We use jet kerosene as fuel and developing an energy source or fuel with low or zero GHG emission has crucial importance on mitigating emissions throughout our industry. Therefore, we put great importance on developing an alternative fuel for aviation industry. With the motivation of taking a pioneering step on this purpose, we involved in a multi-party project with our fuel supplier Istanbul Grand Airport - IGA. However, it seems that there is only one supplier, we have only a few number of particular domestic jet fuel suppliers and as mentioned above, finding a solution for mitigating flight emissions has crucial and significant importance in climate change mitigation activities. As Turkish Airlines, we have a strong intention to develop and consume Sustainable Aviation Fuel (SAF) throughout our flights to contribute to climate emergency. With this motivation, we started a project with our fuel supplier Istanbul Grand Airport. Please hence that while calculating the percentage of total procurement spend (direct and indirect) cell; our OPEX is taken as denominator and the overall jet fuel expenditure in 2020 is taken as numerator.

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

After examining the development of SAF production around the world, the emerging market and regulations by our fuel supplier, including all stakeholders; Pre-feasibility studies were conducted with a company to establish a SAF facility in our country using local raw material resources. For SAF refueling, which is an initial stage of the SAF production facility, it is on our agenda to carry out a SAF demo flight at Istanbul Airport in the second half of 2021 in cooperation with our Incorporation and our fuel supplier company.

**Comment**

Please hence that while calculating the percentage of total procurement spend (direct and indirect) cell; our OPEX is taken as denominator and the overall jet fuel expenditure in 2020 is taken as numerator.

---

**Type of engagement**

Compliance & onboarding

**Details of engagement**

Included climate change in supplier selection / management mechanism

**% of suppliers by number**

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

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

**Rationale for the coverage of your engagement**

For Turkish Airlines climate aspects are an integral part of the business strategy. Turkish Airlines constantly improve their climate and environmental measures and involves their suppliers as well in terms of supporting Turkish Airlines understanding of climate and environmental responsibility. Turkish Airlines, we expect our employees and suppliers to comply with national and international environmental regulations and company policies.

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

The procured product and service purchase contracts contain the following clause: 1. Supplier will fulfill the Environmental Legislation, national and international requirements that it is obliged to comply with while performing its activities, products and services under the Contract. 2. If deemed necessary by TK, TK will be able to carry out audit/quality control to Supplier within the scope of the management system documents of TK and applicable national/international rules. In pursuant of the findings determined as a result of these audits/quality controls, corrections/requirements may be requested from Supplier by TK. Supplier is obliged to fulfill the requested corrections/requirements within time periods determined by TK. In the event that Supplier does not fulfill the corrections/requirements within the specified time periods, TK has the right to apply the liquidated damages included in the Contract. 3. If requested by TK, Supplier is obliged to submit all the information/documents that it has issued on environmental issues. 4. If applicable, Supplier shall submit ISO 14001 Environmental Management System or EMAS (Eco-Management and Audit Scheme) or IEnvA (IATA Environmental Assessment) Certificates. 5. If applicable, Supplier shall submit the life cycle analysis of the relevant products/goods. 6. If applicable, Supplier shall submit its Zero Waste Certificate. 7. As stated in the Zero Waste Regulation, Supplier 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 Supplier. In addition, the environmental policy has been prepared within the scope of suppliers.

**Comment**

We pay attention to the following issues when choosing our suppliers under the title of sustainable catering. Our meals are prepared in accordance with the ISO 22000 Food Safety Management System, accompanied by expert food engineers, according to high hygiene standards, and we prefer the products of ISO 22000 certified suppliers for raw material supply. We evaluate the suppliers in detail within the scope of the "Supplier Firm Risk Assessment Procedure" during the selection process, and ensure that the right supplier is selected. Product safety controls are carried out by the coordinated work of our Purchasing Department and Quality Assurance Department, from the acceptance of raw materials to the final product. As the effect of sustainable catering service; We not only support the promotion of our local products by meeting 90% of the food supply domestically, but also save fuel and reduce carbon (CO2) emissions by shortening the distance traveled by the raw materials until they reach us.

---

**C12.1b**

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

**Type of engagement**

Education/information sharing

**Details of engagement**

Other, please specify (Internal customer)

**% of customers by number**

100

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

0

**Portfolio coverage (total or outstanding)**

<Not Applicable>

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

We target all of our internal customers at the first attempt, who are our employees.

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

A09E032-Greenhouse Gas Awareness training: It took 16 days for the content to be controlled and arranged by our chief and to be ready for production, and 1 person conducted the process. Production process: 5 days of production, then 8 days of revision, 2 people worked on the revision of the training for 13 days. Greenhouse Gas Awareness Training: Content Control Process was done at 16 person/days Online Training Production Process was done at 10 person/days Training Revision Process was done at 16 person/days. A09E200-ISO 14001 Environmental Management System and Waste Management training: : It took 40 days for the content to be ready for production by controlling and arranging the content by our chief, and 2 people conducted the process. Production Process: 4 people worked in the training for 12 days, 9 days of production, 3 days of revision. Environmental Management System and Waste Management Training: Content Control Process was done at 80 person/days Online Training Production Process was done at 36 person/days Training Revision Process was done at 12 person/days.

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**C12.1d**

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

We have adopted the principles of transparency, justice, responsibility and accountability in all our activities. We are working to ensure that our brand goals and values are adopted by our stakeholders. We will continue to improve our good governance practices. In line with our vision of adding value to our stakeholders, we will continue to develop our cooperation and increase the number of projects we carry out with our business partners.

Our Incorporation's Sustainability Strategy in this scope: To create value in the future by going beyond today's achievements with our understanding of business excellence and innovation in the light of global trends and expectations of employees, customers, suppliers, subsidiaries, all business partners and shareholders with a holistic approach to all emerging environmental, social and economic impacts and an effective risk management.

Turkish Airlines declares its Sustainability Policy, which has been prepared based on its sustainability strategy in order to bring together its employees, customers, suppliers, subsidiaries, all business partners and shareholders with the same goal regarding its future. Our Incorporation's Sustainability Policy has been determined within the framework of material issues determined by taking into account the expectations of our stakeholders and our sustainability strategy. Priority Topics of Sustainable Development Goals;

- Increasing fuel efficiency and reducing emissions to combat climate change
- Waste Management
- Resource efficiency
- Customer Satisfaction
  
- Access to products and services
  
  
  
  
  
  
  
  
  
  
- Safety
  
  
  
  
  
  
  
  
  
  
- Security
  
  
  
  
  
  
  
  
  
  
- Supporting biodiversity
  
  
  
  
  
  
  
  
  
  
- Human rights and employee development
  
  
  
  
  
  
  
  
  
  
- Employee health and safety and well-being
  
  
  
  
  
  
  
  
  
  
- Contribution to economic development
  
  
  
  
  
  
  
  
  
  
- Diversity and gender equality
  
  
  
  
  
  
  
  
  
  
- Innovation
  
  
  
  
  
  
  
  
  
  
- Supporting social entrepreneurs for innovative solutions within the scope of Social Responsibility
  
  
  
  
  
  
  
  
  
  
- Humanitarian intervention within the scope of social responsibility
  
  
  
  
  
  
  
  
  
  
- Encouraging children and young people in the fields of science, technology and aviation within the scope of social responsibility

Turkish Airlines provides all its customers with the highest possible standards in flight safety and flight security, and designs, implements and supervises all processes with the same precision, from the simplest to the most complex operations, in order to ensure the sustainable implementation of these standards. It constantly monitors employee and customer satisfaction, measures it periodically and carries out the necessary studies to increase satisfaction, designs and implements projects. It provides a suitable working environment and equal opportunities to its employees, and invests in their development by ensuring their health and security. It protects the confidentiality, integrity and accessibility features of information and develops projects to ensure the security of information belonging to all its stakeholders.

As Turkish Airlines, we plan to reach the target of reducing the carbon dioxide emissions of IATA, of which we are a member, by half in 2050 compared to 2005.

In this direction, our TÜBİTAK priority field project titled "Microalgae Based Sustainable Bio-Jet Fuel Project (MICRO-JET)", which we applied together with Boğaziçi University, was accepted. Within the scope of the project, pilot production of synthetic biokerosene using hydrotreated fatty acids (HEFA) and hydrothermal liquefaction (HTL) methods from microalgae has started. 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 our flights. Thus, Turkish Airlines will be one of the rare global companies that can produce and use the cleanest type of biofuel accepted by IATA.



C12.3

**(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?**

- Direct engagement with policy makers
- Trade associations
- Funding research organizations
- Other

C12.3a

**(C12.3a) On what issues have you been engaging directly with policy makers?**

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Cap and trade	Support with major exceptions	European Union decided to restrict the scope of the EU Emission Trade System (EU-ETS) with the flights which take off from and land in within the borders of the European Economic Area in 2016. Accordingly; we monitor and calculate our emission values, falling under the scope of EU-ETS, in accordance with the related requirements and verify our emissions by an authorized independent certification body. We fulfill all necessary notifications within the scope of EU ETS and follow developments closely. 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.	We are supporting the efforts and putting great efforts to fully complying. We offset our emissions over our allowances
Energy efficiency	Support	We work closely with both domestic and international air navigation service providers to improve the air traffic management system. In addition to a team dedicated to constantly researching the most suitable flight routes, we have established a committee with many units to work on the SESAR (Single European Sky Atm Research) project. Among our other infrastructure projects aimed at increasing operational efficiency; airport improvement works, such as the construction of new parking areas and better use of airspace with an improved approach procedure.	We are supporting the efforts and putting great efforts to fully complying. We offset our emissions over our allowances
Other, please specify (ICAO Carbon Offsetting)	Support with major exceptions	Within the scope of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), which was implemented by the International Civil Aviation Organization (ICAO) in order to reduce the effects caused by the CO2 emissions originating from the aviation industry and which we have voluntarily committed to implement from the pilot phase, all international We monitor and report our emissions from our flights. 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. And our emission report, which we will prepare every year, will be verified by a third-party independent verification body authorized by ICAO. In the following years, our emissions that remain above the base year emission values will be neutralized by our Incorporation with the carbon credits to be obtained from the projects in line with the CORSIA.	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. And our emission report, which we will prepare every year, will be verified by a third-party independent verification body authorized by ICAO.
Carbon tax	Support	With Partnership for Market Readiness (PMR) aiming to contribute to the efforts to reduce GHG emissions in developing countries, which are of great importance in the global fight against climate change, and to use market-based instruments effectively. The technical support program was implemented by the World Bank in 2011. Program; - Creating a platform for technical discussions on market mechanisms for abatement, - To support the capacity building activities of the implementing countries financed by developed countries and their pilot applications in this field. In 2013, Turkey was included in the program with 19 implementing countries. We closely follow the progress & meetings related to this project carried out by the Ministry of Environment and Urbanization are followed.	We are supporting the efforts and putting great efforts to fully complying. We offset our emissions over our allowances

C12.3b

**(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?**

Yes

C12.3c

**(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.**

**Trade association**

International Air Transport Association (IATA)

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

As a member of IATA, the aviation industry's trade association, Turkish Airlines has been advocating the implementation of a mandatory global fuel and CO2-reporting tool for airlines, that shall serve as basis for governments and regulatory bodies in future policy making. IATA has been advocating its implementation amongst regulatory decision-makers on behalf of Turkish Airlines and its other member airlines.

**How have you influenced, or are you attempting to influence their position?**

As Turkish Airlines, we plan to reach the target of halving the carbon dioxide emissions, in 2050 compared to 2005 as set by IATA, of which we are a member. Our Company has adopted the International Air Transport Association's (IATA) short- and long-term goals for reducing carbon emissions in the fight against climate change, and we continue to work with dedication towards these goals. In order to strengthen the environmental management system with the requirements specific to the aviation industry, our Incorporation participated in the IATA Environmental Assessment (IEnvA) Management System Program, implemented by The International Air Transport Association (IATA) specifically for airline companies in 2020. At Turkish Airlines, all environmental issues are managed by the Quality Assurance Department, which is directly affiliated with the General Manager. Environmental Management Review Meetings are held regularly with the participation of senior management and Vice President Quality Assurance. Employees of our Incorporation, have been selected by national and international aviation authorities to take part in the implementation of sustainability activities, ensuring and improving sustainability in the Sustainability Committees of the associations we are a member of, and take active roles in these groups. As one of the leading companies that shape sustainability in the aviation industry, we will continue to systematically carry out our sustainability efforts in 2020. Our employees actively participate in the Committees below: IATA(The International Air Transport Association) Environmental Oversight Council IATA (The International Air Transport Association) Sustainability Environmental Advisory Council SEAC Environmental Data Working Group SEAC Single Use Plastics Working Group

**Trade association**

SESAR (Single European Sky Atm Research)

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

SESAR (Single European Sky ATM Research) is the technological pillar of the Single European Sky . It aims to improve Air Traffic Management (ATM) performance by modernising and harmonising ATM systems through the definition, development, validation and deployment of innovative technological and operational ATM solutions. These innovative solutions constitute what is known as the SESAR concept of operations. Source: [https://ec.europa.eu/transport/modes/air/sesar\\_en](https://ec.europa.eu/transport/modes/air/sesar_en)

**How have you influenced, or are you attempting to influence their position?**

We work closely with both domestic and international air navigation service providers to improve the air traffic management system. In addition to a team dedicated to constantly researching the most suitable flight routes, we have established a committee with many units to work on the SESAR (Single European Sky Atm Research) project. Among our other infrastructure projects aimed at increasing operational efficiency; airport improvement works, such as the construction of new parking areas and better use of airspace with an improved approach procedure.

**C12.3d**

**(C12.3d) Do you publicly disclose a list of all research organizations that you fund?**

Yes

**C12.3e**

**(C12.3e) Provide details of the other engagement activities that you undertake.**

As Turkish Airlines, we have aimed to reduce the negative environmental aspects caused by the aviation industry and we have adopted this aim with all the staff of the management. In this direction, within the scope of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), implemented by the International Civil Aviation Organization (ICAO), which our country has committed to comply with voluntarily from the pilot phase; Our first Emissions Report, in which our CO2 emissions from international flights in 2019 are declared, was prepared in 2020. After our Emissions Report was verified by an independent verifier, the report was submitted to the Turkish Directorate General of Civil Aviation (DGCA). We continue to work to maintain compliance with the scheme requirements.

In order to regulate the procedures and principles regarding the monitoring, reporting and verification of greenhouse gas emissions arising from national and international aviation activities, the draft "Regulation on the Monitoring of Greenhouse Gas Emissions Originating from Aviation Activities" has been prepared and is planned to enter into force. In this context, THY makes evaluations about this regulation and its impact on its own actions.

With the draft "Regulation on the Monitoring of Greenhouse Gas Emissions from Aviation Activities" by Turkish DGCA, we will report and verify all of our monitored emissions through the DMS (Data Management System) system and present them to the Directorate General of Civil Aviation

**C12.3f**

**(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?**

As Turkish Airlines, we are determined to fight climate change, one of the most important environmental problems in the world. In this context, we carry out multifaceted studies within the Incorporation to eliminate and reduce the factors that may have an impact on climate change. Supporting initiatives related to fuel efficiency, taking measures to reduce natural resource consumption and greenhouse gas emissions are some of our efforts for this purpose. In addition, the measures taken by international aviation authorities against climate change are supported by our Incorporation and their requirements are fulfilled.

Our Incorporation participated in the Single-Use Plastics Working Group established within the IATA Sustainability and Environment Advisory Council (SEAC). The objectives of this group include developing strategies and policies for the reduction of single-use plastics, setting timelines, target and key performance indicators, monitoring and evaluating possible scenarios and trends in the industry.

The committees we are actively involved in are listed below;

IATA (The International Air Transport Association) Environmental Oversight Council

IATA (The International Air Transport Association) Sustainability Environmental Advisory Council

Star Alliance Sustainability Virtual Expert Community

SEAC Environmental Data Working Group

TIACA (The International Air Cargo Association) Sustainability Working Group

LEED is a certificate of appreciation awarded to buildings that comply with the fundamental criteria of sustainability to support natural life without disrupting the ecosystem. In the certification process of the buildings, the location and transportation, the sustainability level of the lands, water efficiency, materials and resources used, energy and atmosphere and indoor quality are taken into consideration. Our buildings, which we achieved high success in all conditions, were entitled to receive the LEED Green Building certificate. The delivery process of LEED certificates of some of our buildings continues.

As Turkish Airlines, we carry out studies to identify all environmental aspects and environmental impacts arising from our operations, to eliminate these environmental impacts as a priority, and to minimize them if they cannot be completely eliminated. We include in our "Important Environmental Aspects Report", including the effects of the pandemic, the significant environmental dimension changes that resulted from our activities in 2020 and were detected in the working areas of our partnership located within the borders of our country. There were no environmental accidents/environmental emergencies arising from our activities, products and services in 2020, no non-compliance with environmental legislation was detected, and our Incorporation was not subject to any criminal action in environmental matters.

**C12.4**

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**(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 voluntary sustainability report

**Status**

Complete

**Attach the document**

2020 Sustainability Report.pdf

**Page/Section reference**

THY Sustainability Report 2020 - Governance pgs : 22-34 Strategy pgs: 24 Risk&Opportunities pgs :37 Emissions figures pgs : 12,60,79 Emission targets pgs : 50-51,67

**Content elements**

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

**Comment**

**Publication**

In mainstream reports

**Status**

Complete

**Attach the document**

thy\_annual-report\_2020.pdf

**Page/Section reference**

THY Annual Report 2020, pgs 136,137,139-157.

**Content elements**

Governance

Strategy

Risks & opportunities

Emissions figures

**Comment**

Established in 1933, Turkish Airlines' main fields of activity are all types of domestic and international passenger and cargo air transportation. Of the Incorporation shares, 50.88% are publicly traded, 49.12% are owned by Turkey Wealth Fund, and one C Class share is Owned by Republic of Turkey Ministry of Treasury and Finance Privatization Administration. The paid-in capital of the Incorporation is TL 1.38 billion. The Incorporation owns six subsidiaries and 12 joint ventures, adding up to 18 in total. As the airline flying to the most countries and international destinations in the world, Turkish Airlines flies to a total of 324 destinations as of the end of 2020, of which 52 are domestic and 272 are international. Turkish Airlines increased the number of aircraft in its fleet by 8.7% in the last 5 years to 363 by the end of 2020, of which 338 are passenger aircraft including 104 widebody and 234 narrow-body and 25 are freighters. In 2020, Turkish Airlines realized 28 million passengers with a 62.4% decrease compared to the previous year. The number of passengers decreased by 54.6% on domestic lines and 67.8% on international lines. While the landing number of passenger aircraft was 209,581 with a decrease of 57.0%; cargo and mail transported decreased by 3.6% to 1,487,233 tons.

**C15. 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.**

**C15.1**

**(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.**

	Job title	Corresponding job category
Row 1	CFO	Chief Financial Officer (CFO)

**Submit your response**

**In which language are you submitting your response?**

English

**Please confirm how your response should be handled by CDP**

	I am submitting to	Public or Non-Public Submission
I am submitting my response	Investors	Public

**Please state the main reason why you are declining to respond to your customers**

Request not received directly from customers

**Please confirm below**

I have read and accept the applicable Terms