Welcome to your CDP Climate Change Questionnaire 2022

C0. Introduction

C0.1

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

Established in 1956, Tekfen Group operates in five business areas: Engineering&Contracting, Chemical Industry (formerly reported as Agri-Industry), Agricultural Production, Services&Investments. Tekfen Holding is the umbrella company for all of the firms and subsidiaries in the Tekfen Group. Its shares are traded in İstanbul Stock Exchange (Borsa İstanbul) and are quoted in BIST 30 Index. The Tekfen Group's founding partners have served as the originators, benefactors and directors of many environmental, educational, and social NGOs. Those roles kept people, social welfare, and environmental wellbeing at the focal point of the Tekfen Group's business culture and charitable activities since the very outset.

The Group has 39 companies and 13 subsidiaries. In 2021, the Group had USD 1.832 billion in revenues and assets of USD 1.896 billion. With 16,543 skilled employees (contractors included) and 66 years of experience, it is exemplary within the business world in terms of quality standards and ways of doing business.

Engineering&Contracting Group, with extensive experience especially in oil, gas&petrochemical facilities, provides turnkey-delivery EPC (Engineering, Procurement & Construction) projects and Design & Build solutions in such areas as pipelines, oil and gas terminals, tank farms, oil refineries, pumping and compressor stations, power plants, industrial facilities, highway and rail system projects, sports complexes, and infrastructure and superstructure projects. Engineering and Contracting Group has generated 50.5% of total turnover. In the reporting year, 13,308 employees worked in the Group.

As the flagship company of the Tekfen Contracting Group, Tekfen Construction is a solution partner preferred by leading employers around the world. Tekfen Construction is an internationally recognized leader of the Turkish contracting sector, operating in many countries. To date, it has completed over 550 projects, demonstrating its accumulated expertise. As of end of 2021, Tekfen Construction's active projects portfolio had a contract value of USD 1.256 billion. In Engineering News-Record's 2021 list of the World's 250 biggest international contractors based on their 2020 operations, Tekfen Construction ranked 80th (2020 list: 65th).

Tekfen Engineering provides engineering design, procurement and project management services for group and non-group projects. Tekfen Engineering's human resources and their knowledge and experience as well as its use of innovative technology make it one of the leading firms in its sector in Turkey.

Tekfen Manufacturing provides engineering, manufacturing, and installation services related especially to the storage and process equipment needed in the oil, petrochemical, and chemical industries and by industrial facilities such as gas plants, iron & steel mills, and power stations.

Chemical Industry Group operates in Classic, Organic & Organomineral Fertiliser's production and distribution. Toros Agri has been at the service of Turkish agriculture for the last 40 years. In the Istanbul Chamber of Industry's 2021 list of the five hundred business concerns in Turkey, Toros Agri ranked in 56th place. In fertilisers, Toros Agri controls a 38% share of Turkey's total installed production capacity and in terms of overall output and market share, it is Turkey's biggest fertiliser producer. It has 1.214 dealers and authorized sales points throughout Turkey, enabling it to distribute its products to every corner of the country. Toros Agri, who introduced its first organo-mineral fertilisers to the market in 2017, considers its investments in the organic and organo-mineral segment not only from a commercial perspective but also as a contribution to the sustainability of the country's agriculture. Toros Agri carries out its production activities in this field through Gonen and Meram Renewable Energy. Chemical Industry Group has generated 44.4% of total turnover. In the reporting year, 1977 employees worked in the Group.

Agricultural Production Group operates in the production of agricultural inputs such as seeds, seedlings, and saplings and its fruit grower operations and they are carried out through Tekfen Agri, the group's agricultural research, production, and marketing company. Tekfen Agri - Agripark complex is one of only a very few high-tech agricultural R&D centres in Turkey. Exploiting Turkey's rich biodiversity, the centre engages in the production of disease-free seeds and seedlings using the plant tissue-culture method. Agricultural Production Group has generated 1.1% of total turnover. In the reporting year, 220 employees worked in the Group.

Services Group operates in Terminal services, Free zone operations, insurance and facility management. Investment Group incorporates Tekfen Ventures' innovative entrepreneurship investments and holding activities. Services and Investment Groups have generated 4% of total turnover. In the reporting year, 318 employees worked in these two Groups.

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
Reporting year	January 1, 2021	December 31, 2021	No

C0.3

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

Azerbaijan
Iraq
Kazakhstan
Qatar
Russian Federation
Saudi Arabia
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-CH0.7

(C-CH0.7) Which part of the chemicals value chain does your organization operate in?

Row 1

Bulk organic chemicals

Bulk inorganic chemicals

Fertilizers
Nitric acid

Other chemicals

Specialty organic chemicals

C-CN0.7/C-RE0.7

(C-CN0.7/C-RE0.7) Which real estate and/or construction activities does your organization engage in?

Other real estate or construction activities, please specify

We engage in oil, gas and petrochemical facilities in such areas as pipelines, oil and gas terminals, tank farms, oil refineries, power plants, industrial facilities, highway, sports complexes, and infrastructure and superstructure projects.

C0.8

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

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	TRETKHO00012
Yes, a Ticker symbol	TKFEN

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 Chair	Accountability on climate-related issues start at the top, with the Holding Board of Directors (BoD). All of the final decisions related to climate change issues are approved by the Board of Directors, which is led by Chairman of the Board. Some of these responsibilities include approval of targets, budgets for emission reduction initiatives, management plans of identified risks and opportunities, internal carbon pricing mechanism etc. Board Members are directly informed on climate issues in Tekfen Holding Board Meetings on a special agenda. One of Tekfen's values stated by the Chairman of the Board is "the protection of nature and the environment". The Chairman of the Board follows climate-related issues closely. Therefore, we can say that our Chairman of the Board is the highest responsible person for climate-related issues. An example of a climate-related decision: In 2020, our Chairman of the Board decided to prepare Tekfen's net-zero roadmap

	and then to set a net-zero target date. With the approval of our Board Chair, in 2020 we have also signed a 5 year agreement with the The Scientific and Technological Research Council of Turkey (TUBİTAK), to develop projects on Sustainability related issues including sustainable environment issues like waste management, water treatment technologies, and alternative energy technologies like biomass based technologies and renewable energy. This agreement also includes development of projects related to construction materials and mobility which will help reduce our Scope 3 GHG emissions in the long term. In 2021 our Chairman of the Board approved preparation of a Net-Zero Roadmap for Toros Agri, emissions of which comprises 83.74% of our Scope 1&2 GHG emissions and 95.9% of our Scope 3 GHG emissions.
Chief Executive Officer (CEO)	Tekfen Holding's CEO has the ultimate responsibility to monitor and approve the annual CDP Climate Change disclosure content. The CEO follows the reporting outcomes and reviews the improvement points identified for the short-medium and long term. Therefore, the CEO has an executive responsibility of managing climate-related issues in Tekfen Holding. CEO also has the executive power for important issues such as defining climate change strategy, management of the risks/opportunities and finalization of targets before they are presented to the Board of Directors. In 2020 our CEO has approved our internal "Climate Change and Energy Efficiency Directive" which applies to all of our group companies. Our CEO has also approved our 2025 and 2037 GHG emission reduction targets in 2020. Another decision led by our CEO is on performing detailed energy audit in our permanent facilities and the use of renewable energy in our facilities, which we have already started in our office buildings.

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	Please explain
Scheduled – some meetings	Reviewing and guiding strategy	Accountability on climate-related issues start at the top, with the Holding Board of Directors (BoD). Board Members are informed regularly on climate-related

	Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	issues in the form of global trends as well as corporate performance, business plans, risks and opportunities. CEO has the executive power for important issues such as strategy, risks/opportunities, targets, etc. Committees have been set up to assist the BoD with proper fulfilment of its duties and responsibilities. Holding Early Detection of Risk Committee (RC), which is chaired by one of the independent Board Members, meets every two months. High risks evaluated and approved in the Risk Inventory by each Group Company's Board are also directly presented to the Holding Board for risk action determination after they are reviewed by the RC. In the reporting year, our climate and water related risks were presented to the RC in several meetings and the risks which score higher than 16 according to our risk assessment procedure, were also presented to the BoD. In September 2017, the Sustainability Committee (SC) was established. The Sustainability Committee is chaired by the Deputy CFO who is also a member of the Top Management. In 2019 the Environment Working Group was established as one of the 5 working groups that report to the SC. The sustainability committee is also a subcommittee of the Corporate Governance Committee. The SC reports critical issues at least once a year to the Corporate Governance Committee (CGC). The CGC reviews the annual outcomes and recommendations presented by the Sustainability Committee and notifies the Board of Directors for reviewing and guiding strategy, major action plans, policies, etc. The Board of Directors reviews and guides business plans and approves annual budgets. Sustainability Committee sets performance objectives for climate change and water management while also monitoring the realization of climate change and water-related objectives on behalf of the Board of Directors. Changes in emissions data are also reported to the Board of Directors annually. The consolidated budget of Tekfen Holding is approved by the Board of Directors, hence the BoD also approves all of the investments of the Group Companies.

C1.1d

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

	Board member(s) have competence on climate-related issues
Row 1	Yes

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)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Risk committee	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other committee, please specify Corporate Governance Committee	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Sustainability committee	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify Health, Safety, Environment and Quality (HSE&Q) Coordinator	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify Environment working group	Both assessing and managing climate-related risks and opportunities	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).

Accountability on climate-related issues start at the top, with the Holding Board of Directors (BoD). Committees have been set up at the Company to assist the BoD with proper fulfilment of its duties and responsibilities.

Two of these committees namely Early Detection of Risk Committee (RC) & Corporate Governance Committee (CGC) assist the BoD on climate-related issues. BoD, RC and CGC's climate-related responsibilities include developing strategies and overseeing the management of climate-related risks and opportunities.

RC is led by an independent member of our board & another member of our board serves as the member of the RC. RC meets every two months in these meetings, CEO, Risk Director, Vice-Presidents and Risk Managers of the Group Companies are also present. RC identifies risks (including climate-related risks) that may threaten the existence, development & continuation of the Company & takes the measures necessary to prevent them & acts to manage the risks. Group Companies submit their periodic reports for monitoring the risks & RC reviews these risk documents every two months & refers the major risks & its own comments & assessments to the BoD. Risks are considered by the BoD, which may instruct Tekfen Group companies as to how particular risks are to be managed.

The CGC consists of two independent Board Members & Investor Relations Director. CGC undertakes studies regarding in-house arrangements & changes concerning the understanding, adoption & implementation of corporate governance principles by the Company employees & submits the results of these studies to the Board of Directors. Therefore, all of the climate related issues except risk management are within the scope of CGC.

The BoD, CGC & the RC are informed about the climate related risks, opportunities, scenarios & possible courses of action by the CEO & the Deputy CFO who is also the Leader of the Sustainability Committee.

The Sustainability Committee (SC) is formed under the CGC in order to help the BoD oversee & effectively manage climate & sustainability-related issues with a holistic approach. SC is led by Deputy CFO who is also a member of the Top Management. SC consists of management-level members appointed by top management of Tekfen Holding & the General Managers of Tekfen Group Companies, including Working Group Leaders (Corporate Communications&Sustainability Director, HSE&Q Coordinator, IT Director, Corporate Governance Director & HR Director).
SC is responsible not only for formulating the Tekfen Group's sustainability strategies, road maps, objectives, policies, & reporting criteria including climate-related issues, but also for integrating sustainability efforts in line with Tekfen Holding's priorities & for ensuring that all group companies are actively involved in dealing with sustainability issues.

In 2019, we have formed 5 working groups under the SC, one of which is the Environment Working Group (EWG). This group is led by the Holding HSE&Q Coordinator. The group members consist of environmental professionals from our group companies, including Technical Coordinator experienced on Energy & Facility Management of Tekfen Tourism, Project Coordinator experienced on wastewater & environmental projects from Tekfen Engineering, a Sustainability Expert experienced on biodiversity from Tekfen Construction, a Sustainability Expert experienced on Life Cycle Assessment (LCA) from Tekfen Agri, Deputy HSE&Q Manager experienced on green buildings from Tekfen Holding & a Sustainability Manager experienced on the other environmental issues from Toros Agri.

EWG regularly notifies the SC on sustainability related issues which are deemed crucial.

Material issues, risks & opportunities related to climate change are also managed by the EWG. EWG is in charge of analyzing current & future trends on climate change scenarios, GHG accounting while continuously aiming to identify improvement projects. EWG is also responsible for preparing a roadmap for short, mid & long term targets.

The outcomes of the EWG meetings are reported to the SC. The chairman of the SC is Deputy CFO who is a member of Top Management. The members of Top Management are CEO, General Secretary, CFO, Contracting Group Vice President, Agri-Industry Group Vice President, Strategy, Business Development & Investments Vice President & Deputy CFO. Top Management holds regular meetings. Current & emerging climate change-related issues including material risks & opportunities together with carbon emissions performance as well as annual emissions reporting outcomes are monitored & analysed by Top Management.

In addition, the BoD is also informed by the CGC, RC and/or the CEO about climate related issues like risks & opportunities, regulatory changes, targets & status of achievement of these targets, strategies & major plans of action. BoD is also informed by HSEQ Coordinator on a case-by-case basis upon request on climate related issues like possible Net-Zero road-maps for Tekfen.

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	In 2019, we have introduced a new performance assessment system, in which we use software namely “Pi Performance Management System” which is developed for Tekfen. Our new performance assessment methodology includes a top to bottom approach. Our CEO has targets related to compliance with the Sustainability Action Plan, which includes actions about environment and relates directly to climate change related issues like energy reduction and efficiency projects. The rate of achievement of his targets directly affects the lower-level executives, as all of the targets are interconnected. The targets and their level of achievement are controlled using a software. Achievement of annually set/revised targets and the Company’s success directly contribute to the individual’s performance score, resulting in monetary reward in the form of an increased salary or a

		bonus. So in this new system, climate-related issues are also one of the KPI's of almost all white-collar employees.

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
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target Energy reduction project Efficiency project Behavior change related indicator Environmental criteria included in purchases Supply chain engagement	Our performance assessment methodology includes a top to bottom approach. Our CEO has targets related to compliance with the Sustainability Action Plan, which includes actions about corporate governance, stakeholder relations, social responsibility, environment, digitalization and innovation. There are actions under environment and innovation which relates directly to climate change related issues like reduction of Scope 1 and 2 GHG emissions, energy reduction and efficiency projects. Our CEO also has targets to complete the Net-Zero roadmap and presenting the roadmap to the Board of Directors. In 2021 we have started the preparation of a Net-Zero Roadmap for Toros Agri, emissions of which comprises 83.74% of our Scope 1&2 GHG emissions and 95.9% of our Scope 3 GHG emissions. The rate of achievement of his targets directly affects the lower-level executives, as all of the targets are interconnected. The targets and their level of achievement are controlled using a software. Achievement of annually set/revised targets and the Company's success directly contribute to the individual's performance score, resulting in monetary reward in the form of a bonus.
Chief Financial Officer (CFO)	Monetary reward	Emissions reduction target Energy reduction project Efficiency project Efficiency target Behavior change related indicator Environmental criteria included in purchases	Our performance assessment methodology includes a top to bottom approach. Our C-Suite Officers including our CFO have targets on energy reduction and efficiency together with targets to reduce GHG emissions. These targets are linked to the targets of our CEO. The rate of achievement of their targets directly affects the lower-level executives, as all of the targets are interconnected. The targets and their level of achievement are controlled using a software. Achievement of annually set/revised targets and the Company's success directly contribute to the

		Supply chain engagement	individual's performance score, resulting in monetary reward in the form of a bonus.
Corporate executive team	Monetary reward	Emissions reduction project Energy reduction project Efficiency target	Toros Agri is the source of 83.74% of our scope 1 and 63.98% of our Scope 2 GHG emissions. Therefore, Toros Agri's emission reduction projects and targets considerably affect us. Accordingly, Toros Agri has business level targets (reduction of electricity, natural gas, LNG, fuel oil consumption) covering all top management, starting from the Company's executive team (General Managers), and white-collar employees. Achievement of annually set/revised targets and the Company's success directly contribute to the individual's performance score, resulting in monetary reward in the form of a bonus. Moreover, the CEO has a specific target defined as "realizing the Sustainability Action Plan", which includes the effective planning of emissions reduction initiatives.
All employees	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Behavior change related indicator Environmental criteria included in purchases Supply chain engagement	Every month, Tekfen Agri-Industry picks an employee as Health, Safety, and Environment (HSE) Employee of the month for their HSE performance. Selection criteria include environmentally friendly initiatives. Tekfen Construction also rewards employees based on HSE performance including environmental performance. Our group companies also have their own targets related to their field of activities as Scope 1+2 GHG emission reduction, energy efficiency, Preparation of a Net-Zero roadmap, increasing the share of renewable energy and reducing water consumption. As our performance assessment methodology includes a top to bottom approach, the targets of each group company effects the performance of all employees starting from top management (General Managers), and white-collar employees. Achievement of annually set/revised targets and the Company's success directly contribute to the individual's performance score, resulting in monetary reward in the form of a bonus.

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	1	Our short-term horizon is defined as 1 year which is the period that covers of our detailed OPEX and CAPEX plan for both corporate management and risk management.
Medium-term	1	5	We define our medium-term horizon based on Tekfen Holding Strategic Plan which covers a 5-year plan. Therefore, 1 to 5 years is considered as medium-term for our Company
Long-term	5	30	Any time horizon over 5 years is considered as long-term for Tekfen Holding. This is applicable to all business aspects including risk management. Moreover, long-term climate-related risks are evaluated on a scenario basis consistent with the horizons established by the international organizations such as IPCC and IEA covering 2030 and 2050 as crucial milestones

C2.1b

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

The effect of identified risk is assessed 5 main impact areas, namely:

1. Financial impact
2. Legal impact
3. Reputational impact
4. Operational impact, and
5. Strategic impact

The risk is assessed to have a substantive impact if:

o Financially; if the risk impact is >5% EBITDA (singular impact, which equals to 4.110.950 USD for the reporting period) or >2,5% of EBITDA (continuous impact, which equals to 2.055.475 USD). EBITDA for the reporting period 82.219.000 USD .
o Legally; due to legislative or contractual non-conformities very important loss of business or fines (please see substantive financial impact definition above)
o Reputational; risk poses critical level effects on our reputation. Very important negative effects on some stakeholders, very important stakeholder crisis. Continuous bad press on international media and important markets. Situation is critical and can not be kept under control.

o Operationally; more than 10 days of disruption in operations, events reducing the performance of employees. For construction projects 10% difference in planned and realized progress of projects.
o Strategically; Very important impact on strategic plans and their execution. Strategies need to be revised considerably.
If one of the above impacts is assessed to be the impact of any identified risk, the risk is automatically identified to have a substantive impact regardless of its probability of occurrence.

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

STEP 1: Identification

The 1st stage of risk management is the identification of financial, operational, reputational, strategic, compliance risks & the responsible owners of each risk within the guidance of the risk department by going over all business processes together with department managers.

Tekfen Holding & Group Companies have a written Corporate Risk Management (CRM) document governing, explaining & laying down the rules for managing their respective risks. CRM document is prepared in line with ISO 31000 Risk Management Standard and COSO Enterprise Risk Management Framework.

CRM specifically classifies risks as strategic, operational, financial, compliance & reputational risks.

The periodic risk monitoring reports are submitted to the Early Detection of Risk

Committee (RC) every two months. The organisational units tasked with the conduct & reporting of risk management activities have also been specified in every Tekfen Group company. Risk reports of every Group Company are submitted to the Holding after being approved by the respective company's Board of Directors (BoD).

RC reviews the risks documents received from the companies every two months, and refers the major risks & its own comments & assessments to the Tekfen Holding BoD. RC is led by an independent member of our board a& the permanent members of the RC are two of our Board Members & the Risk Director. The RC meets every two months & in these meetings, CEO, Vice-Presidents & Risk Managers of the Group Companies are also present. Risks are considered by the Tekfen Holding BoD, which may instruct Tekfen Group companies as to how particular risks are to be managed.

In addition, a copy of each Tekfen Holding Consolidated Risk Report is regularly sent to an independent auditor.

Climate & water risks at the corporate level are considered under strategic, financial & compliance risks while at an asset level, they are considered under operational, financial & compliance risks. Activity related environmental impacts at asset level are also considered during environmental risk assessment processes under ISO 14001 EMS. Long-term climate-related risks are assessed up to 2050 based on the most recent scientific assessments of IPCC. The transitional impacts of climate change are assessed using IEA NZE2050 scenario whereas the physical impacts of climate change are factored into our risk assessments using RCP4.5 Scenario.

STEP 2: Risk Assessment
All value chain stages, including direct operations, upstream and downstream are included in the risk assessments.

Short, medium and long-term time horizons are used for especially assessing climate related transitional risks whereas climate-change related physical risks are usually assessed in the long term because the effects of climate change are expected to escalate.

Risk assessment is carried out in the 2nd stage at which the risk's gross impact, gross probability, both with a scale of 1 (very low) to 5 (very high) & the gross risk score is calculated by multiplying gross impact and gross probability and graded as; low (1-4), medium (5-14) or high (15-25). Current controls & their efficacy reveal the net risk score & the net financial impact. Risk analysis involves consideration of the causes & sources of risk, their positive & negative consequences & the likelihood that those consequences may occur. Existing controls & their effectiveness are also considered. The risks that are assessed to have a substantive financial and/or strategic impact are addressed first.

STEP 3: Response to Risk
The 3rd stage is deciding how to manage the risk (reduction, transfer, abstention, and acceptance).

Mitigation actions & the cost of actions are determined in the 4th stage.
The tracking of these actions makes up the 5th step.
During the selection of the most appropriate risk as well as opportunity management option, Tekfen evaluates the costs & efforts of implementation against the benefits derived, with regard to legal, regulatory & other requirements such as social responsibility & environmental protection. WEF Global Risks Report lists climate-related risks & water security risks among the top 10 risks. Therefore, Tekfen has chosen "reduction" as risk treatment & "capitalization" of opportunity generating options for both climate and water-related risks & opportunities.
RMD consolidates the risk inventories of all Tekfen Companies & reports the risks that have a net score over 16 to the BoD through RC. Risk portfolio including risks with net risk scores more than 16 (4x4) is reported to the BoD every two months. These risks are monitored & followed upon by the BoD as well.
Climate-related opportunities are managed as part of new investments and acquisitions with the primary aim to convert risks into opportunities. For example; renewable energy generation is identified as an opportunity & Toros Agri acquired 70% of the biogas and organic fertilizer producer Gonen Renewable Energy Production, Inc. and 99,9% share of Toros Meram Renewable Energy with the aim of becoming a major player in the organic & organomineral fertilizer markets.
Physical risk example:
According to climate scenarios, agricultural industry & especially farmers will be impacted severely by the chronic changes in precipitation regimes and extreme weather events.
The final customer for Toros Agri's products (fertilizers), are the farmers. A chronic change in the precipitation regime may impact the yield of the crops and reduce the profitability of the produce. As a result, small farmers may go out of business and this in turn will have an impact of reduced demand for our products and services.
This risk was assessed to have a min. financial impact of over 4.11 M $, therefore it is assessed to have a substantive impact (Score 5) on our business.
Probability of this risk is scored as 4, hence the gross risk score is 20 which is high, as this risk cannot be controlled the net risk score is the same. As the net score is over 16, this risk is reported to the BoD. Details of how this risk is addressed and managed can be found under section 2.3a of this report.

Transitional risk example:
The main transitional risk we face especially is the implementation of an Emissions Trading Scheme (ETS) Turkey & also for the goods we export to EU Carbon border adjustment mechanism (CBAM). Our 3 fertilizer plants & their products fall under the scope of these emerging regulations. After this risk was identified, it was scored on gross probability and impact. The scoring was as follows
Probability: Very High (5)
Impact: This risk has a financial impact of over 4.11 M USD hence its assessed to have a substantive impact with an impact score of 5
The gross risk score is therefore 25 which is high. After the current controls are implemented the net risk score is assessed to be 16, and this risk is reported to the

BoD. Details of how this risk is addressed & managed can be found under section 2.3a of this report.

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	Relevance: Doing business in-line with current regulations are paramount for Tekfen Holding. All laws and regulations related to our activities are identified, monitored and our compliance is constantly assessed by internal auditors, third-party auditors, and local authorities. Example: Toros Agri's CO2 and N2O emissions are being externally verified and reported to the Ministry of Environment and Urbanization as part of the Turkish regulation on Monitoring GHG Emissions (MRV). Any possible changes or additional requirements to be prompted under this regulation are under our close radar and therefore included in our corporate-level compliance risk assessment. Moreover, other applicable legal requirements are considered in our Corporate Risk Management system under the risk type of "Compliance". In addition, at the asset level, compliance with legal requirements is also taken into consideration at the site-specific Environmental Impact Assessment process. As an example of site-spesific legal compliance according to the Article 8 of 'Regulation on Increasing Efficiency in the Use of Energy Resources and Energy', Tekfen Tower needs to implement ISO 50001 Energy Management System until 2023 and Toros Agri has already established ISO 50001 Energy Management System. Although risks related to the current regulations are always assessed under our risk management system, they are not reported under section 2.3 a of this report because their estimated impacts are below the thresholds of our substantial impact definitions.
Emerging regulation	Relevant, always included	Relevance: We closely monitor the emerging climate-related regulations in all of the countries that we operate in and export our goods to. This gives us a chance to develop our strategy in the light of the new developments

		and reduce the risks of being exposed to emerging regulation. Example: In the end of 2020, a draft Climate Change Regulation was published under the World Bank Lead Partnership for Market Readiness Program. Although this regulation is still not presented to the Grand National Assembly of Turkey, it gives us a basic concept of the regulations that we will face in the near future. The regulation gives the signals of an emerging Emission Trading System (ETS) and/or potential Carbon Taxation mechanism in Turkey, which we have already factored into our risk assessments. Another emerging regulation is the EU-Green Deal, with the carbon border adjustment mechanism, which will definitely impact our exports to EU. Toros Agri has 3 fertilizer plants in Samsun, Mersin, and Ceyhan, which are already under the scope of Turkish MRV regulation, however, as there is no ETS mechanism in place yet, our only obligation is monitoring and reporting our GHG emissions which does not impose a high financial or strategic impact on us. Toros Agri regularly attends meetings on ETS and Low Carbon Development (Technical Support Project for Solution Based Strategy and Action Development for Low Carbon Development). We are considering all methods of carbon pricing mechanisms with the potential to come into force in the form of ETS and/or Carbon Tax in our climate-related risk assessments. In order to effectively manage this risk and prevent any substantive financial impact, we have determined an approximate cost of our GHG emissions and calculated our climate-related potential financial impact in case of an emerging carbon pricing mechanism regulation. This year we have also factored in the EU Carbon Border Adjustment into our risk assessments. Please see Risk 2 under section 2.3a of this report for further details on the assessment of risks related to the emerging regulations.
Technology	Relevant, always included	Relevance: As part of the Holding activities, Toros Agri operates in an emission-intensive sector. Therefore, active management of emissions to prevent related risks via reducing emissions by using low carbon technology is of great importance to us. We are also constantly investing in R&D projects and new technologies that have a potential to reduce GHG emissions on our

		value chain. Example: As an example of managing technology-related risks and opportunities, we are actively planning on installing a state of the art catalyzer system in our fertilizer operations to reduce our N2O emissions which is around 77.71% of our gross Scope 1 GHG emissions. This is assessed to be a major opportunity for Toros Agri. Among the Group Companies, Toros Agri's production of N2O emissions-intensive fertilizers constitute 77.71% of our gross Scope 1 GHG emissions. If we will manage and reduce N2O emissions, this can have the potential to result in increased revenue while helping us to become more resilient to the expected carbon pricing mechanism to be introduced in Turkey. In addition, we would be a preferred brand over other fertilizer manufacturers. We invest in technology to reduce our future climate-related risks, and we also use technological developments in order to benefit from climate related opportunities. Pivot bio and Phospholitions are two great examples of our technological investments in agricultural industry. Both are technological start-ups with innovative producst that have a potential to change farming practices and reduce the use of fertilizers up to 75%, hence reducing GHG emissions related to fertilizer use. In 2020 we have also signed a 5 year agreement with the The Scientific and Technological Research Council of Turkey (TUBITAK), to develop projects. This agreement also includes development of projects that will reduce our direct and value chain GHG emissions. We also use technology to benefit the environment through our value chain. As the agricultural sector is defined to be one of the main sectors to be affected by physical climate-related risks, we also make use of technology while awareness-raising and enabling efficiency in our customers' everyday lives. We closely monitor technological applications used in the industry to reduce our N2O related GHGs. Overall, technology-related risks, as well as opportunities, are assessed as part of strategic risks covering both company and asset levels.

Legal	Relevant, always included	Relevance: Non-compliance with all laws and regulations including climate-related ones causes risk which exposes our Company to litigation. Therefore, legal compliance is paramount to Tekfen Holding and compliance risks are identified as one of the 5 main risk categories assessed in our corporate-wide risk management system. However, there is no risk under this category identified as substantive to date except the emerging ETS regulation, and EU Carbon Border Adjustment Mechanism which is assessed under the risk type “emerging regulation”. Example: For example, emerging ETS regulation has legal repercussions and we are actively managing our emissions reporting system. We closely monitor technological applications used in the industry to reduce our N2O related GHGs. Applicable legal requirements are considered in our Corporate Risk Management system under the risk type of “Compliance”. In addition, compliance with the legal requirement is also taken into consideration at the site-specific Environmental Impact Assessment process at the asset level. Other than the emerging regulations on ETS and EU Carbon Border Adjustment Mechanism, no other legal risks are assessed to have substantive financial or strategic impacts, so no legal risks are reported under section 2.3a.
Market	Relevant, always included	Relevance: Sectoral as well as market risks are closely monitored on a Group Company basis. Our three business areas; Engineering and Contracting Group, Chemical Industry and Agricultural Production Group are among the sectors which are likely to experience climate change impacts the most. Example: In the context of climate change, one of the main risks we are currently facing in our contracting sector activities is the risk of changing consumer behavior. The project activities that we undertake are mainly in the oil and gas industry, and due to the raising awareness about climate change, the contracting Group’s existing customers are likely to shift preferences to move towards low carbon projects. This will reduce the number of projects and therefore will have an

		impact on the Group's turnover. Currently, approximately half of the Group's operations cover oil and gas projects, and 50.5% of Tekfen Holding's revenues come from the Tekfen Contracting group. You can find more details about the assessment and management of this risk under Risk1 in section 2.3a of this report.
Reputation	Relevant, always included	Relevance: Our brand image and reputation are very important both locally and internationally. Therefore, under our multidisciplinary corporate-wide risk assessment reputational risks are one of the five main topics evaluated. Example: As part of reputational risks, we expect some pressure due to climate-related issues on our companies that can affect our brand image. Increasing demand for climate change action from international initiatives (e.g. NACAG), local communities and NGOs can result in an increased level of stakeholder pressure towards fertilizer production facilities. Toros Agri's Mersin Fertilizer Production Plant (the only facility with N2O emissions and emitting around 77.71% of our Gross Global Scope 1 GHG emissions due to N2O emissions) may therefore be subject to increased stakeholder pressure due to its main operation. This may result in loss of reputation. These pressures and reputational loss may result in decreased demand for N2O related fertilizers, namely Calcium Ammonium Nitrate (CAN) and Ammonium Nitrate (AN). Our main operations include oil and gas contracting and high N2O emitting fertilizer production and are specifically considered in the context of our reputation. We are aware that climate-related reputational risks are material to us but at the same time, if well managed they may create opportunities for us. According to the IEA Net-Zero by 2050 report, in order to reach the net-zero target by 2050, no new oil and gas field development project should be approved as of 2021. Therefore, we have diversified our services to maintain the existing refineries to optimize their performance and the resulting GHG emissions rather than focusing on building new ones. In our Chemical Industry operations, we actively investigate the feasibility of new technologies which can enable

		significant N2O emissions reductions and develop new fertilizers with low carbon and water footprint. Although climate-related reputational risks are always assessed under our risk management system, they are not reported under section 2.3 a of this report because their estimated impacts are below the thresholds of our substantial impact definitions.
Acute physical	Relevant, sometimes included	Relevance: Acute physical risks, especially flooding due to excessive rainfall, losing crops because of hail storms and extreme low temperatures and droughts which ruins the crops are among the risks we take into consideration at all times for the continuity of our operations. Excess rainfall and flooding have been especially apparent in recent years in the geographies we operate in. Example : As part of Tekfen Holding operations, our Chemical Industry and Agricultural Production operations are among the ones that are likely to be affected by increasing severity and frequency of extreme weather events. This risk has 2 dimensions for our operations: (1) In both our Toros Agri and Tekfen Agri operations we have warehouses where our products are stored. Acute and severe physical events can damage our products, causing revenue loss together with likely damage to our assets; (2) Tekfen Agri is a stone fruit producer (such as apricots and cherries) which are vulnerable to extreme weather conditions. Therefore, if the severity of extreme weather events such as hail, cyclone, etc. increase, we may face a risk of reduced output as our products will be adversely effected in both quality and quantity, leading to revenue loss. We are aware of the impact that the acute climate-related physical events can cause to our operations. We are considering the acute and chronic physical impacts of climate change on our assets both for existing operations and future investments. These risks are evaluated as part of operational risks along with any type of risk that can affect the business continuity. As acute physical risks are not continuous, we assess them on a case by case basis as part of plant/ workplace specific emergency response plans.

		Acute physical risks can also affect the supply chain operations of Tekfen Agri which include purchasing fruits from the dedicated orchards. The effects of acute physical events may result in a disruption in supply chain operations or a rise in operational expenses. This is one of the risks identified and monitored, however, it is not assessed to have a substantial financial impact therefore not reported under section 2.3a.
Chronic physical	Relevant, always included	Relevance: Chronic physical risks, like temperature variability, heat stress, changing temperatures & water stress are very important risks for us as these changes will have direct impacts on our operations, such as (a) changing temperatures & temperature variability can impact the project timelines of Tekfen Construction, which may result in loss of revenues as those projects have very strict time constraints (b) water stress can reduce our yield in Tekfen Agri Group Company operations who has its own orchards as well as suppliers who produce high-quality stone fruits, and reduce the demand for Toros Agri's fertilizers. Examples: (1) In one of the projects of Tekfen Construction we have already seen the impacts of this risk. Due to changing temperatures, the soil that should be frozen in winter season was not frozen & we had no access to project site for a long time, which resulted in a delay and loss of profit. Tekfen Construction Risk Department is working on a detailed study to determine the financial impacts of such risks. (2) Chronic changes in precipitation and extreme weather event patterns do have the potential to impact various aspects of our operations. For example, in our Tekfen Agri agricultural production operations, there are various fruits that are vulnerable to changing climate patterns & chronic extreme weather events. Evaluating climate &water scenario analysis conducted by internationally well-respected organizations such as IPCC, there is a clear indication that chronic & extreme weather events will get more frequent in the medium to long term. If these extreme events are to get to a certain point, it will affect our products directly, resulting in decreased output related to revenue loss. In order to prevent this, we would need to invest in measures such as placing hail nets, shading systems and/or drill new wells to have access to sufficient amounts of water. Therefore, overall, this risk may result in increased capital costs for us. We are considering the acute&chronic physical impacts of climate change on our assets. In order to better manage the climate-related chronic physical risks that we are exposed to, we evaluate climate

		change scenario analysis such as IPCC RCP 4.5, and use widely respected tools such as WRI Aqueduct and WWF Water Risk Filter Tool to assess the longer-term shifts in climate patterns together with water stress as well as other water-related both current and future risks.

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?

Downstream

Risk type & Primary climate-related risk driver

Market

Changing customer behavior

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

This risk has two aspects, the first one is the impact of changing customer behaviour on Tekfen Contracting Group’s oil and gas infrastructure projects, and the second aspect is the changing consumer behaviour in EU where Toros Agri exports fertilizers.

1. Tekfen Contracting Group undertakes projects in the oil and gas industry. The breakdown of Tekfen Contracting Group's backlog depends on many parameters. Due to completion of infrastructure projects in 2021, the ratio of oil & gas projects has been increased but this does not reflect the Company's strategy. As of Dec 2021, approximately half of the Group’s operations cover oil and gas projects, and 52% of Tekfen Construction's backlog comes from oil & gas sector projects. Due to increasing divestment from fossil fuel projects in line with the transition to a low carbon economy and aiming to achieve ambition GHG emission reduction, the Group’s existing customers are likely to shift preferences and move towards low carbon projects. This may reduce the number of projects and gradually has to potential to impact on the Group’s turnover. 50.5% of Tekfen Holding’s revenues come from Tekfen Contracting

group.

2. Toros Agri produces chemical fertilizers. As a part of the European Green Deal, EU is planning to become carbon neutral by 2050. The Farm to Fork Strategy is at the heart of the European Green Deal aiming to make food systems fair, healthy and environmentally-friendly. The Strategy sets ambitious targets one of which is a reduction of nutrient losses by at least 50% while ensuring that there is no deterioration in soil fertility and reduction of fertilizer use by at least 20%. These will undoubtedly change the customer behaviour towards using less chemical fertilizers, impacting the EU export volumes of Toros Agri.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

12,440,000

Potential financial impact figure – maximum (currency)

296,880,000

Explanation of financial impact figure

For Tekfen Contracting Group:
Approximately 1/2 of the Contracting Group’s business volume is in the oil and gas industry. For the reporting period this reflects about 657 Millon USD revenue from oil and gas projects.

According to International Energy Agency's (IEA) World Energy Investment 2022 report, the oil & gas investment will be reduced due to energy transition. The oil & gas energy investment will be reduced from 2022 to 2030 in both scenarion (*APS and **NZE).

As per APS scenario, the oil & gas investment will reduce from 718 B USD in 2022 to 709 B USD in 2030 which is 1.3% decrease
As per NZE scenario, the oil & gas investment will reduce from 718 B USD in 2022 to 404 B USD in 2030 which is 44% decrease

The financial impact figure represents the contract values of construction projects that could be affected by changing customer behavior; the minimum impact figure for Tekfen

Construction is: 657 M USD x 1.3% = 8.54 M USD and the maximum impact figure is: 657 M USD x 44% = 289.08 M USD

*APS = Announced Pledges Scenario, the spending required to meet all country and regional climate pledges on time and in full.
**NZE = Net Zero Emissions by 2050 Scenario, the spending required to get the global energy sector to net zero by mid-century.

For Toros Agri Operations:
The potential financial impact figure for Toros Agri is calculated with the assumption that 10-20% of Toros Agri's European sales revenue will be affected adversely from EU Green Deal, the max impact is assumed as 20% as farm to fork strategy aims to reduce fertilizer use by at least 20%.
Toros Agri's 2021 sales revenue from European operations was around 39 million USD. 10% of this figure is 3.9 million USD and 20% is 7.8 million USD

Therefore, the minimum impact figure for both Tekfen Construction and Toros Agri is: 8.54 + 3.9 = 12.44 million USD

And the maximum impact figure is:
289.08 + 7.8= 296.88 million USD

Cost of response to risk

50,185,841

Description of response and explanation of cost calculation

In 2021 about half of Tekfen Construction's business volume was oil & gas projects. If there is a reduction of business volume, Tekfen Construction can overcome the impact by an increase in other project types. Tekfen Construction has started playing an active role in the maintenance and repair of existing industrial facilities.

In 2020, strategic connections were established with important technology providers and customers, and collaborations with new projects were developed. We have signed a 5-year agreement with TUBİTAK (The Scientific and Technological Research Council of Turkey) to develop projects on Sustainability related issues including waste management, water treatment technologies, and alternative energy technologies. The cost of this cooperation agreement is 2,860,841 USD over 5 years.

In line with the sustainability targets of Tekfen Holding, in 2020 Tekfen Engineering has established a working group to improve the company's competencies in designing environmental technologies.

The Working Group has determined target markets for the Engineering and Contracting Group by researching conventional and new generation environmental technologies. The content of the studies are basically covered with the following topics and supported by related projects and communication channels;

1. Conventional Environmental Technologies: water purification, industrial and household wastewater treatment, air pollution control, sulphur recycling and emissions improvement, solid waste management
2. Clean energy production technologies: Energy from biomass (traditional biogas production), biofuel/biochemicals production from waste (gasification), plastics recycling (chemicals recycling), solar power, wind power, hydrogen and fuel cells, biofuels/biochemicals production from 2G biomass, carbon capture, storage and reuse technologies.
3. Environmental Infrastructure: water procurement and distribution, waste water removal, sustainable transportation

In 2021, R&D expenses of Engineering and Contracting group was 1,325,000 USD.

In order to reduce the risk for Toros Agri, we have invested in Gonen and Meram Renewable Energy plants, which are integrated biogas and organic fertilizer production plants operating with zero liquid waste goal and producing renewable electricity as well as organic fertilizer. The cost of these two investments is 46 million USD.

The total cost of response equals to:
2,860,841 + 1,325,000+ 46,000,000 = 50,185,841 USD

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation
Carbon pricing mechanisms

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

This risk has two aspects, the first one is the emerging regulation in Turkey, and the second one is the emerging regulation (EU Green Deal- Carbon Border Adjustement Mechanism) in the EU where we export our products (mainly fertilizers).
Turkish GHG regulation requires monitoring, verification, and reporting of CO2 emissions from certain heavy emitting industries such as electricity producers, cement, lime and steel, and fertilizer production, etc. with the future intentions of an Emission Trading System.

Toros Agri has 3 fertilizer plants in Samsun, Mersin, and Ceyhan, which are already under the scope of Turkish MRV regulation. Turkey is in the process of establishing a carbon pricing mechanism in the form of an emissions trading system. The background for this regulation is already present (Turkish MRV) and brings on requirements such as the installation of Continuous Emissions Monitoring Systems (CEMS) to sectors with high GHG impact.

Turkey has not yet implemented an ETS, but a draft climate regulation was published under the World Bank's PMR Turkey program in the end of 2020 and this regulation also includes an ETS scheme. In 2019 and 2020 ETS simulation studies were also performed under the PMR project.

All these progress and active efforts show that there will be an ETS in Turkey and this will increase our operating costs.

From the EU perspective, the European Commission announced the European Green Deal (EGD) program in December 2019. The main aims of the EGD are to create the first climate-neutral continent by 2050, to protect production and employment in the EU, and for the EU to become an effective player in global emissions reductions. The effects of the EGD will not be limited to the EU. It would be fair to think of the EGD as the driving force behind the maturing "New Climate Regime," which would ultimately transform other countries with trade, financial, and political ties to the EU.
The EGD utilizes two tools that are applied through trade channels. These are the Carbon Border Adjustment (CBA) mechanism and the circular economy regulations. CBA aims to tax imports to the EU market according to the carbon content of the imported goods.

Fertilizers were announced as a pilot sector for EU-CBAM, reporting on carbon content of fertilizers will start in 2023 and taxation system will start in 2026, this means we may face carbon taxes for the nitrate based fertilizers that we export to EU starting from 2026.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

3,770,000

Potential financial impact figure – maximum (currency)

24,520,000

Explanation of financial impact figure

The minimum and maximum potential financial impact figures are estimated based on internal studies on carbon pricing.

In the most recent (July 2020) ETS simulation workshop (Turksim Workshop 5) performed under the PMR project, the study report prepared by Vivid Economics, shows a floor price of 25 TL (3.57 USD-converted using average USD/TL rate for 2020 as the study was published in 2020) per ton carbon. This value is used as min. carbon price for Turkish ETS.

For EU CBAM, EUA min and max prices are taken from EMBER carbon price viewer as 30 € Min (35.49 USD) and 80 € Max. (94.64 USD) The min. price used for EU CBAM is also used as a max. price for Turkish ETS.

In 2021 the verified total N2O and CO2 emissions of the 3 plants owned by Toros Agri were equal to 928,397 tons of CO2e.

The ETS simulation studies published under the PMR Project, include capping the emissions at 80% and a free allocation of 50% of the allowances. This results in a liability of about 60% (928,397 x 0,60= 557,038 tons CO2e).
The potential financial impact for the implementation of a Turkish ETS is therefore calculated by multiplying the 60% of our current GHG emissions by the unit price per ton of CO2e.

Min. Impact=557,038 x 3.57 USD=1.99 Million USD
Max. Impact=557,038 x 35.49 USD=19.77 Million USD

The above figures represent the potential financial impact of a Turkish ETS. The impact of EU CBAM is calculated using the export volumes to EU countries and the total emissions related to production of these goods.

Toros Agri exports two types of Nitrogen based fertilizers to Europe and their total emissions are calculated as 50,198 tons CO2e. The min. impact of CBAM = 50,198 x 35.49 USD = 1.78 Million USD
Max. Impact of CBAM is = 50,198 x 35.49 USD = 4.75 Million USD
Total Min financial impact of the risk = 1.99+1.78 =3.77 Million USD
Total Max financial impact of the risk = 19.77+4.75 =24.52 Million USD

Cost of response to risk

3,530,641

Description of response and explanation of cost calculation

There are technologies that offer around 80-93% reduction in N2O emitting nitric acid plants. With the technical consultancy provided by the Nitric Acid Climate Action Group, we have completed the feasibility study to select the most appropriate technology to invest in. The cost of management covers the approximate cost of installing a new catalyzer system to reduce N2O emissions. The cost of the N2O catalyzer system was previously contracted as 1.92 Million USD however, the emission reduction promised in the contract was 80-85%. As we needed more ambitious reduction targets in line with our Net-Zero roadmap, we are now in the process of revising this contract, in order to achieve reductions of 90-93%.

Another response to this risk, which is also a part of our highest efforts to continuously work on developing new and more environmentally friendly products, we have invested in an R&D Center in Mersin as part of our fertilizer production practices.

Having received its Ministry of Industry and Technology license in 2017, the Toros Agri Mersin Plant's R&D Center began working in the same year. 2018 was a year in which substantial progress was made by engaging in scientific efforts to meet the agricultural sector's demands and needs and giving priority to the development of new products that will help improve agricultural productivity. Employing 33 people, the center's goals include developing new products that will further diversify Toros Agri's plant nutrients portfolio as well as addressing issues such as improving existing products, water-soluble fertilizers, developing production processes, optimization, production-related energy conservation, and reducing environmental impact.

For example, in the reporting period, as a result of the R&D activities held, the specialty fertilizer portfolio was enriched by the addition of Smart Urea and Smart N21 which are slow release fertilizers. Studies show that depending on circumstances in cultivation, slow release fertilizers can reduce denitrification and greenhouse gas emission by up to 40%. In the reporting year, sales of these specialty fertilizers went up by 61.2% with respect to 2020.
The total cost of response to this risk covers the investment cost of the catalyzer unit (USD 1,920,000) the initial investment cost of the R&D center (USD 715,000) as well as the R&D budget dedicated to the Center (USD 895,641) in the reporting period. Therefore, total cost of response to this risk is USD 3,530,641

Comment

C2.4

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

Yes

C2.4a

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

Identifier

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Ability to diversify business activities

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

The increasing adoption of organic agriculture by the consumers and the increase in the demand for food safety in the world have caused the organic and organo-mineral fertiliser market to grow steadily. Many countries offer incentives that direct farmers to organic farming.

Studies in Turkey have revealed that 94% of the available agricultural land is poor in organic matter. For the first time in 2019, the Turkish Ministry of Agriculture and Forestry announced a “Solid Organic-Organomineral Fertiliser Usage Support” with the aim to fight this deficiency.Due to the effect of such support programmes that promote organic agriculture, this market tends to show a rapid growth in Turkey. Consumption of organomineral fertilisers is expected to increase by 245% reaching 295,000 tons in 2024, while organic fertiliser consumption is expected to reach 150,000 tons within the same period. This represents an opportunity as Toros Agri, is already active in this market through two subsidiaries; Toros Gönen Renewable Energy and Toros Meram Renewable Energy.

Toros Gönen was already operational when acquired in 2019 and Toros Meram started its operations in 2020. Both facilities are successful examples of the circular economy with a total capacity of 1170 t waste/day, producing biogas through the fermentation of organic wastes & generating electricity from biogas. Both facilities also produce solid & liquid organic fertilisers from the wastes that have completed the gasification process. These two production facilities with a total capacity of 115,000 tons, present us with an opportunity to increase our revenues through increased demand for our products. Toros Agri continues to work hard in order to conduct marketing activities to support field sales, trigger the consumers’ demand & raise awareness in the industry through

production trials.

For the development of plant and fertilizer formulations and their follow-up, 8 different project-based trial studies were carried out in the R&D greenhouse and field trials in different fields were also carried out. As a result of the studies carried out in the R&D Center; As of the end of 2021, 6 articles have been accepted and 4 articles have been published in international refereed journals on the analysis of the technical properties of ammonium nitrate, the improvement of these properties and the caking problem of fertilizers. As of the end of 2021, 1 patent and 4 utility model applications were made.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

6,630,000

Potential financial impact figure – maximum (currency)

61,630,000

Explanation of financial impact figure

As explained in the company specific description, this opportunity presents us with a potetial increase in our revenues through an increased demand of our products.
Minimum potential financial impact is calculated by the realized figures of production in 2021. This figure includes the sales of solid and liquid organic fertilizers produced in 2021 (1.85 million USD).
The minimum impact figure also includes the sales of the electricity produced by Gonen Renewable energy in 2021 (4.78 million USD)
Therefore, the minimum financial impact is calculated as:
1.85 million USD+ 4.78 million USD=6.63 million USD

The stated max. potential financial impact figure is the max. annual potential production capacity for both facilities. The impact figure is calculated with the current sales prices which is a conservative estimate.
If both facilities work in full capacity, their total production volume will be 115,000 tons of organic and organomineral fertilizers. This equals to 52.67 million USD revenue.
Both facilities also produce renewable energy, which is also an extra opportunity of for financial income for Toros Agri. When working in full capacity both facilities will produce

67,347 MWh of renewable energy which translates to 8.96 million USD of revenue from the sales of electricity.
Therefore, the maximum financial impact is calculated as:
52.67 million USD+8.96 USD = 61.63 million USD

Cost to realize opportunity

46,000,000

Strategy to realize opportunity and explanation of cost calculation

The strategy to realize this opportunity is the investment we made to Toros Gönen and Toros Meram. Our decision to invest in these two facilities are also part of a broader vision of Tekfen and a rather strategic decision on our roadmap to becoming a net-zero company. Within this broader vision, Toros Agri acquired 70% of the biogas and organic fertilizer producer Gonen Renewable Energy Production, Inc. and 99,9% share of Toros Meram Renewable Energy with the aim of becoming a major player in the organic and organomineral fertilizer markets.

The cost calculation includes acquisition of 70% of Gonen Renewable Energy (7 million USD) and the investment made in 99.9% of Meram Renewable Energy (39 million USD).

This investment is a one-time cost, whereas the potential financial impact of this opportunity is annual.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

Specialty fertilisers are water-soluble fertilisers that are preferred in agricultural lands where drip and sprinkler irrigation systems are used, especially in greenhouse farming.

The widespread use of advanced irrigation systems and soilless farming, due to the

increasing importance of obtaining maximum efficiency per unit area in agriculture and the increasing water shortage on a global scale, have in parallel led to grow of the water-soluble fertiliser market.

The global specialty fertiliser market is estimated to reach 20,9 billion USD by 2025 with a growth of 5.8%. This forecast directs the attention of major producers to this area and leads them to develop growth strategies for this promising product range.

In terms of greenhouse farming, the specialty fertiliser market in Turkey, which has a strong position within the Mediterranean climatic zone, is growing each day. In addition to the greenhouse production particularly concentrated in the Mediterranean and Aegean regions, the increase in drip irrigation systems in field crop cultivation ensures the steady growth of the water-soluble fertiliser market. The size of the water-soluble fertiliser market in Turkey, which is thought to be 155,000 tons in 2021 and is estimated to reach 160,000 tons 2022.

Toros Agri, the pioneer in the specialty fertiliser industry in Turkey, is one of the most remarkable players in the field.
We see this emerging need in specialty fertilizers as an opportunity to develop our product range further through R&D, which will in turn increase our revenues through access to this emerging market.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

219,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The global specialty fertiliser market, is estimated to grow by 5.8% until 2025. The size of the water-soluble fertiliser market in Turkey, which is thought to be 155,000 tons in 2021, is estimated to reach 160,000 tons in 2022. This presents us with an opportunity to increase our revenues through access to new and emerging markets.
In 2021, Toros Agri sales of specialty fertilisers were have increased by 61.2% with

respect to 2020 to an impressive 93,297 tons.

The financial impact is calculated using the specialty fertilizer production target in our 2030 strategic plan which is 537,579 tons. (444,282 tons more than the current reporting year)
Assuming the average price per ton of specialty fertilizers will remain the same this extra production volume has a potential financial impact of 219 Million USD by 2030.

Cost to realize opportunity

1,610,641

Strategy to realize opportunity and explanation of cost calculation

As part of our highest efforts to continuously work on developing new and more environmentally friendly products, we have invested in an R&D Center in Mersin as part of our fertilizer production practices. Having received its Ministry of Industry and Technology license in 2017, the Toros Agri Mersin Plant's R&D Center began working in the same year. 2018 was a year in which substantial progress was made by engaging in scientific efforts to meet the agricultural sector's demands and needs and giving priority to the development of new products that will help improve agricultural productivity. Employing 28 full time people, the center's goals include developing new products that will further diversify Toros Agri's plant nutrients portfolio as well as addressing issues such as improving existing products, water-soluble fertilizers, developing production processes, optimization, production-related energy conservation, and reducing environmental impact.

Within the scope of the project to develop fertilizers with controlled nitrogen release, it was aimed to reduce agricultural greenhouse gas emissions and reduce nitrate pollution in groundwater by making urea, NPK and Ultra Nitrogen fertilizers with slow release. Within the scope of this project, our product "Smart Urea" has been registered. We have also applied to TEYDEB 1501 for this project and the project was entitled to receive support from Tübitak.

TÜBİTAK 1501 project - Development of Slow Release Urea Fertilizer for Reducing Greenhouse Gases and Nitrate Loss Caused by Washing and Field Efficiency Research studies are also carried out.

In the reporting year, sales of these specialty fertilizers went up by 61.2 % with respect to 2020
The total cost to realize opportunity covers the initial investment cost (USD 715,000) as well as the R&D budget dedicated to the Center (USD 895,641) in the reporting period.

Comment

C3. Business Strategy

C3.1

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

Row 1

Transition plan

No, but our strategy has been influenced by climate-related risks and opportunities, and we are developing a transition plan within two years

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

We are currently working on our low-carbon transition plan. When the plan is finalized and published, it will automatically be included as a scheduled resolution item in our Annual General Meetings.

C3.2

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

	Use of climate-related scenario analysis to inform strategy
Row 1	Yes, qualitative

C3.2a

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

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios IEA NZE 2050	Company-wide		We are on the path to Net-Zero, this is why we have selected IEA NZE2050 scenario to evaluate our transitional risks. This scenario sets out an emissions trajectory consistent with a 50% chance of limiting the global temperature rise to 1.5°C without a temperature overshoot. We identify our risks in especially short and medium term time horizons according to this scenario. All of our operations are included in the scenario analysis, but the main focus of transitional impacts is our Toros Agri operations due to the agriculture sector's

			sensitivity to climate change and its turnover share in the holding
Physical climate scenarios RCP 4.5	Company-wide		We have examined the applicable scenarios and considered RCP 4.5, conducted by the IPCC to investigate a 2 degree Celsius global warming scenario, as a realistic scenario for the impacts of climate change in Turkey. According to the IPCC RCP 4.5. Scenario, emissions will peak 2040-2050. Turkey will face 2 to 3 degrees in Celsius increase in mean temperature during 2013-2040 and up to 4 degrees Celsius in later periods. Reductions in mean precipitation are also expected. As all of our overseas operations are construction projects that don't last more than 3 years, the geographical boundary of our scenario analysis is mainly focused on Turkey. For the construction projects, during the design phase, we also include the scenario analysis but those results are not reported here. The time-horizons applied are in line with our organizational applications, so we consider short-medium- and long-term effects of climate change according to the related scenarios.

C3.2b

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

Row 1

Focal questions

1. What are the most important transitional risks we may face if the industrialized nations manages to reach Net Zero by 2050?
2. What are the physical risks we may face due to the impacts of climate change?

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

1. There are two transitional risks which may impact our main income generating industries namely Tekfen Construnction and Toros Agri operations. For Tekfen Construction the reduction in oil and gas industry operations may result in a loss of revenue as these projects make up 1/3 of Tekfen Construction's revenue stream. This was already assessed as a risk with significant impacts.For Toros Agri the risk lies in

ETS regulations and added costs of carbon trading.

This risk was also evaluated to be a risk with significant impact. This risk can also be turned into an opportunity with the new catalyzer investment, where we will reduce our GHG emissions significantly and will have a chance to pay less taxes than our competitors.

2. We consider these impacts especially important in our Chemical Industry and Agricultural Production operations in Turkey. Following the acquisition of Alanar Fruit Company, we started having direct fruit production. Therefore, we are expecting impacts on our direct operations as well as in our value chain as farmers will need to use limited water resources more efficiently. This is why we are investing heavily in special fertilizer products that can be used with modern efficient irrigation methods to avoid excess use of resources.

We think that 2 or 3 degrees in Celsius increase in mean temperatures till 2040 can affect our fertilizer production facilities, our customers (farmers), and our orchards. Increasing pressure from NGOs, legal authorities, neighbors, and other stakeholders, difficulties in accessing enough and good quality water are taken into consideration after the interpretations of the scenario analysis. The scenario analysis has been conducted qualitatively by Tekfen Holding HSE&Q Coordinatorship, and Toros Agri and Tekfen Agri's top managements have been informed about climate-related risks associated with the RCP 4.5 Scenario projections.

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	For our products and services, our strategy is influenced by climate-related risks and opportunities which are considered in the short, medium, and long terms (0 to 30 years). Major climate-related scenarios indicate water scarcity as one of the results that is going to be faced. As our Chemical Industry and Agricultural Production Group operations are extremely water dependent on all stages of our value chain, this issue is both a risk and an opportunity for our operations. The risk lies in our upstream and direct operations where we rely on water for the healthy growth of our crops. This risk is

		assessed to be a long-term risk and is managed through assessing climate change and water stress in the region by using WRI Aqueduct Water Risk Atlas. There are also opportunities that lie on our downstream value chain, where we have a potential to benefit from climate-change driven innovation opportunities. As an example of a strategic decision driven by climate change is our investments in the specialty fertilizer market. We pioneer climate change adaptation activities related to this market. Water-soluble fertilizers are used with innovative irrigation techniques such as drip irrigation and results in less water use. Therefore, with shifting customer preferences and increasing water scarcity, Toros Agri's recent investment in an R&D Center has enabled us to realize this opportunity. In addition, in the reporting period, as a result of the R&D activities held, the specialty fertilizer portfolio was enriched by the addition of Smart Urea and Smart N21 which are slow-release fertilizers. Studies show that depending on circumstances in cultivation, slow-release fertilizers reduce agricultural greenhouse gas emissions and nitrate pollution in groundwater. Toros Agri pioneered the specialty fertilizer product group in Turkey and continues to have a significant presence in it. The company's operations in this market continued to increase in 2021, with an increase in sales by 61% in comparison to 2020 and reaching a total of 93.000 tons We consider a 61% increase a very significant increase and the impact may become much more material over the medium to long term if the demand for these products increases.
Supply chain and/or value chain	Yes	According to our climate-related scenario analysis, water scarcity and extreme weather events are some of the main risks for our Agricultural Product Group and Chemical Industry operations in the medium-long term (1-30 years). According to WRI Aqueduct, the water stress levels in Turkey are projected to increase 1.4 to 2 times between 2020 and 2030, which poses a great risk for our value chain. For climate change-related disruptions in our supply and/or value chain, we consider a 10%-20% reduction in our revenues. The adverse effects of climate change can prevent farmers, our most important customers, from continuing their business, which can cause serious decrease in fertilizer sales.

		Therefore, the use of correct, timely, and sufficient amounts of fertilizers is vital for the profitability of farmers and the productivity of their products. An example of a strategic decision taken in this regard is to raise the awareness of the farmers about the correct use of fertilizers. Trainings are continuously provided to our ultimate customers, farmers, covering a wide range of agricultural topics which in return provides a contribution to economic and quality products in agricultural production through increasing awareness resulting in conscious production applications. The increase in quantity and quality of produce yielded from a unit field, resulting from efficient and correct usage of fertilizers, water, and fuel to apply raw materials, contributes to our efforts to enhance our climate change management practices. Toros Agri, with this awareness, has been organizing nationwide “Farmer Training Meetings” continuously since the 1980s, when the company started its operations, to increase quality and hence contribute to farmer’s wealth and protect the environment. In the fertilizer sector, farmer-training seminars, first and solely applied by Toros Agri, are organized throughout Turkey, in countless cities and districts, and open to everyone. In addition to the seminars, thanks to meetings at village cafes and TV programs, Toros Agri has reached over hundred thousands of farmers until today. Toros Agri is in close cooperation with regional agricultural organizations in relation to this matter. We also have our Toros Farmer App that shares educational information and recommendations about fertilizers with our registered farmers and distributors.
Investment in R&D	Yes	Our investment strategy in R&D is influenced by climate-related risks and opportunities which are considered in the long term (5 to 30 years). Climate change & water crisis are among the important risks for our Chemical Industry & Agricultural Production Groups. Being prepared for future impacts is important to us. Therefore, we believe that companies that develop products resistant to new conditions in both fertilizer & seed activities will be ahead of their competitors. In order to turn the risks into opportunities, Tekfen gives utmost importance to R&D activities. Both Toros Agri & Tekfen Agri have invested in R&D centers.

		As an example of a strategic decision influenced by the climate related risks & opportunities, our Chemical Industry Group company Toros Agri has established an R&D facility in Mersin. The facility's aim is to increase our ability to develop new & more efficient products while being the first fertiliser R&D Centre in Turkey. This strategic decision is a reaction to turn what appears to be a risk into an opportunity in the long-term. By investing in R&D we are diversifying our product range so that we can present more efficient products to reduce the use of strategic resources. This will provide us new products so that we can increase our share in the market. As described in Opp2 the financial impact of this opportunity is estimated as 219 million USD. Engineering & Contracting Group company Tekfen Engineering performs R&D activities on Carbon Capture and Storage and Hi-Flex project, which is a tower type concentrated solar power plant which will supply process steam & reduce GHG emissions in pasta production. We've also signed an agreement with TUBITAK, to develop projects on sustainability related issues including waste management, water treatment technologies & alternative energy technologies. Tekfen Ventures supports Entrepreneurship by investing in startups that focus on projects that have beneficial results on Climate Change/Water Security. Two such examples are Pivotbio & Phospholutions. Pivotbio uses microbes' natural ability to convert nitrogen from the air to meet crops' daily nitrogen needs. Phospholutions increases the efficiency of global phosphorus use that reduce phosphorus loads entering the water systems ultimately decreases eutrophication that damages the waterways.
Operations	Yes	For our operations, climate-related risks like emerging regulation (mainly Turkish ETS&EU CBAM) have influenced our strategy, to focus more on reducing our GHG emissions. The time horizon covered for these types of risks are short to medium term (0-5 years). While for risks like chronic physical impacts of climate change cover a longer time horizon (0-30 years). These risks especially impacted our strategy in Agricultural Production Group Companies&Chemical Production Group Companies. Some examples of major strategic decisions that were influenced by climate-related risks&opportunities are:

		• Implementation of ISO 50001 Energy Management System in Toros Agri production facilities. All of these facilities are now ISO 50001 certified which helps us to manage our energy consumption in the best possible way. • Tekfen Tower will implement ISO 50001 Energy Management System until 2023, this decision was led by a current legal&regulatory compliance risk, in order to comply with the requirements of Article 8 of 'Regulation on Increasing Efficiency in the Use of Energy Resources and Energy'. • As a mitigation activity, we are working intensely in reducing our N2O emissions which make up approximately 79.66% of our Gross Global Scope 1 GHG emissions.This strategic decision is influenced by Risk 2, which is the risk of increasing operating costs due to emerging regulations of an emissions trading system in Turkey and carbon border adjustment in the EU. Details of this risk is given under section 2.3a of this report. To reduce our N2O emissions one of the most substantial strategic decisions we made was to invest in a catalyzer technology that will reduce our N2O emissions by 90%.The cost of installation of this system is calculated to be around 1, 900,000 USD, whereas the potential financial impact of this risk is between 3.77 to 24.52 Million USD which is a very high impact according to our risk impact scale. • Moreover, we have also established a new operational unit for renewable energy services under Tekfen Construction&Tekfen Engineering. Tekfen Engineering is working on a Hi-Flex Project which is a tower type concentrated solar power plant.During the Hi-Flex project, the worldwide first complete pre-commercial system using particle technology is being developed. • Installation of hail nets, meteorological stations&humidity sensors in the orchards of Tekfen Agri.

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	Revenues: Water-soluble fertilizers are used with innovative irrigation techniques such as drip irrigation and results in less water use. Therefore, with shifting customer preferences and increasing water scarcity, Toros Agri's

	Capital expenditures Capital allocation Acquisitions and divestments	recent investment in an R&D Center has enabled us to create an opportunity. For example, the specialty fertilizer portfolio was enriched by the addition of Toros Organomix (worm castings), CalMag, two new entries with new ingredients in the water-soluble NPK market (Nutriactive and Greenfeed) and FloraTech (lawn fertilizer) both with lower water needs and carbon footprint. Toros Agri pioneered the specialty fertilizer product group in Turkey and continues to have a significant presence in it. The company's operations in this market continued to increase in 2021, with an increase in sales by 61% in comparison to 2020 and reaching a total of 93.000 tons We consider a 61% increase a very significant increase and the impact may become much more material over the medium to long term if the demand for these products increases.This impact is reflected in our financial planning, and it is assessed to become much more material over medium to long term time horizons (1-30 years) if the demand for these products increases. Direct Costs: In the medium to long-term after an ETS is operational in Turkey, energy prices will increase as the ETS is expected to be modelled after EU-ETS. Energy producers will be the first to be included in an ETS scheme and their ETS related burden will be reflected to the energy prices. An increase in electricity prices will increase our operational expenses. Indirect Costs: In the short term (0-1 years), our Continuous Emissions Monitoring System (CEMS) established in our fertilizer production facilities by government-mandated MRV regulation has increased our operating costs by an average of USD 30,000 per year. We consider the magnitude of this impact to be low, however, it may become higher over the medium to long term (1-30 years) with expected new requirements to be added to the regulatory requirements. The new requirements may include a possible emissions trading system, which may result in a financial impact between 3.77 to 24.52 Million USD. The potential impact figure is calculated using two different assumptions on the ETS allowance price and annual GHG emissions in our MRV regulated Agri-Industry operations. Capital Expenditures: Climate change related risks and opportunities are directly factored into our financial planning process for capital expenditures. As part of our highest efforts to continuously work on developing new and more environmentally friendly products, we have invested in an R&D Center in Mersin as part of our fertilizer production practices. Having

		received its Ministry of Industry and Technology license in 2017, the Toros Agri Mersin Plant's R&D Center began working in the same year. 2018 was a year in which substantial progress was made by engaging in scientific efforts to meet the agricultural sector's demands and needs and giving priority to the development of new products that will help improve agricultural productivity. The magnitude of this impact is still lower than identified substantive financial impact threshold, but we may experience higher impacts in the medium to long term (1-30 years). Capital Allocation: Climate change related risks and opportunities also influenced our financial planning in terms of capital allocation. In our Agri Industry operations, our Mersin Plant has N2O emissions which comprise the majority share of our Scope 1 GHG emissions. The risk of non-compliance or fines due to an emerging regulation similar to EU-ETS has caused us to allocate extra capital to invest in a catalyzer system, with the aim of drastically reducing our N2O emissions which will have an initial investment already approved by our Board of Directors. This catalyzer system investment is also seen as an opportunity, as we may be able to sell our allowances. We may experience high financial impacts in the medium to long term (1-30 years). Acquisitions and Divestments: One of the most effective options to combat climate change and manage GHG emissions is to invest in renewable energy resources. Our business has impacted from this opportunity as a result of its pro-active approach. Toros Agri has acquired 70% stake in organic fertilizer manufacturer Gonen Energy and later on 99.9% share of Toros Meram Renewable Energy with the aim of becoming a major player in the organic and organomineral fertilizer markets. Both facilities are completely environmentally-friendly with their zero liquid waste discharge, advanced flue gas treatment and heat recovery systems. In addition to the economic value generated by the electricity generation and organic fertilizer they produce, the plants reduce GHG emissions around 86,728 tons of carbon dioxide per year and perform a highly effective role in the resolution of their area's environmental pollution issues. Gonen project is validated under Gold Standard and Meram's validation process is still ongoing. Overall, we consider the magnitude of this impact to be medium to long term (1-30 years). Therefore, these incidents are influencing our short, medium and long term financial planning (0-30 years).

C4. Targets and performance

C4.1

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

Absolute target

C4.1a

(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

2019

Target coverage

Company-wide

Scope(s)

Scope 1
Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

Base year

2019

Base year Scope 1 emissions covered by target (metric tons CO2e)

1,015,149

Base year Scope 2 emissions covered by target (metric tons CO2e)

41,114

Base year Scope 3 emissions covered by target (metric tons CO2e)

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

1,056,262

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year

2025

Targeted reduction from base year (%)

15

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

897,822.7

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

1,112,047.64

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

31,972.9

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

1,144,020.54

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

-55.3893762469

Target status in reporting year

Underway

Is this a science-based target?

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

Target ambition

Please explain target coverage and identify any exclusions

The target covers all our gross-global Scope1 and Scope 2 GHG emissions.

This target has been set in line with the Well Below 2 Degrees Scenario. We target a reduction of 15 % from our gross-global Scope1 and Scope 2 GHG emissions, over a period of 6 years, which translates to a 2.50 % reduction per year on average. The target is aligned with IEA WB2C using the absolute contraction approach.

Although currently, our GHG emissions have increased by 9.55% compared to the base year of this target, keeping our investment plans in mind, we still believe we can reach this target until the target year.

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

We have an investment plan in our Toros Agri Mersin plant that will reduce our N2O emissions significantly. The N2O emissions from our Mersin plant currently make up 79.74 % of our Scope 1 and Scope 2 GHG emissions.

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

Target reference number

Abs 2

Year target was set

2019

Target coverage

Company-wide

Scope(s)

Scope 1
Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

Base year

2019

Base year Scope 1 emissions covered by target (metric tons CO2e)

1,015,149

Base year Scope 2 emissions covered by target (metric tons CO2e)

41,114

Base year Scope 3 emissions covered by target (metric tons CO2e)

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

1,056,262

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year

2037

Targeted reduction from base year (%)

40.2

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

631,644.676

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

1,112,047.64

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

31,972.9

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

1,144,020.54

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

-20.6676777041

Target status in reporting year

Underway

Is this a science-based target?

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

Target ambition

Please explain target coverage and identify any exclusions

The target covers all our gross-global Scope1 and Scope 2 GHG emissions.

This target has been set in line with the Well Below 2 Degrees Scenario. We target a reduction of 40.2 % from our gross-global Scope1 and Scope 2 GHG emissions, over a period of 18 years. This target is in line with our 1st Target of reducing our GHG emissions by 15% until 2025, which translates to a 2.50 % reduction per year on average. After 2025 we are aiming to reduce our GHG emissions by 2.1% per year, which makes up an extra 25.2% absolute reduction from 2019 levels. Both of these targets combined, we are aiming a total of 40.2% reduction over a period of 18 years.

Although currently, our GHG emissions have increased by 9.55% compared to the base year of this target, keeping our investment plans in mind, we still believe we can reach this target until the target year.

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

We have an investment plan in our Toros Agri Mersin plant that will reduce our N2O emissions significantly. The N2O emissions from our Mersin plant currently make up 79.74 % of our Scope 1 and Scope 2 GHG emissions.

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

C4.2

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

No other climate-related targets

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		
To be implemented*	5	892.91
Implementation commenced*	0	0
Implemented*	7	3,300.2
Not to be implemented	9	1,679.86

C4.3b

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

Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

1,996.29

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

Scope 1

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

217,781

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

29,924

Payback period

<1 year

Estimated lifetime of the initiative

6-10 years

Comment

3 Process optimization projects in Samsun and Ceyhan which resulted in 9,255,172 kWh of Natural gas savings and 244,303 kWh of electricity savings

Initiative category & Initiative type

Energy efficiency in production processes
Smart control system

Estimated annual CO2e savings (metric tonnes CO2e)

32.35

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

Scope 2 (location-based)
Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

4,680

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

12,420

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

We installed a smart control system in our Ceyhan plant that helped us reduce 75 MWh of electricity/annum.

Initiative category & Initiative type

Energy efficiency in buildings
Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

48.4

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

Scope 2 (location-based)
Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

7,000

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

21,915

Payback period

4-10 years

Estimated lifetime of the initiative

11-15 years

Comment

We have switched to LED lighting in some sections of our Ceyhan Plant saving 112 MWh of electricity.

Initiative category & Initiative type

Low-carbon energy generation
Solar heating and cooling

Estimated annual CO2e savings (metric tonnes CO2e)

62.11

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

Scope 2 (location-based)
Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

9,000

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

45,000

Payback period

11-15 years

Estimated lifetime of the initiative

11-15 years

Comment

We installed a solar water heater to provide hot water to main building, saving 144 MWh of electricity per year.

Initiative category & Initiative type

Low-carbon energy consumption
Hydropower (capacity unknown)

Estimated annual CO2e savings (metric tonnes CO2e)
1,161.06

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
1,100

Payback period
No payback

Estimated lifetime of the initiative
<1 year

Comment
In 2021 we have purchased renewable energy certificates in two facilities of Tekfen Construction:
1- Ceyhan Fabrication Facility
2-Güney Anadolu Main Repair & Maintenance Yard

C4.3c

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

Method	Comment
Compliance with regulatory requirements/standards	Nitrogen oxides treatment unit (DENOX) and Continuous Emissions Monitoring System (CEMS) installations at our fertilizer production facilities are regulatory mandated. As per Turkish GHG MRV Regulation, third-party companies verify our fertilizer plants' GHG emissions and report to the Ministry of Environment and Urbanization. Therefore, the necessary budget for emissions reduction/monitoring initiatives to comply with regulations is always allocated as a priority.
Dedicated budget for other emissions reduction activities	Toros Agri Board of Directors has approved an investment budget for large N2O reduction systems in order to avoid any liabilities the predicted future ETS/Carbon Tax system in Turkey may cause. As the fertilizer production-related N2O GHG emissions constitute the vast majority of our gross Scope 1&2 emissions, any measure to drastically

	reduce those emissions are constantly investigated by our Top Management.
Partnering with governments on technology development	Nitric Acid Climate Action Group (NACAG), affiliated with the German Government, is supporting us in considering options for installing an N2O reduction system. We are receiving know-how support and may receive potential financial support from them. The Turkish Government is also supporting this initiative. As can be seen in this example, Tekfen Holding and its Group Companies are open to and actively seeking collaboration opportunities for know-how sharing and realizing emissions/energy reduction initiatives. In 2020 we have also signed a 5-year agreement with The Scientific and Technological Research Council of Turkey (TUBITAK), to develop projects. This agreement also includes research and development of projects that will reduce our direct and value chain GHG emissions

C4.5

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

No

C5. Emissions methodology

C5.1

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

No

C5.1a

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

Row 1

Has there been a structural change?

No

C5.1b

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

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in methodology	We have extended the scope of our Scope 3 inventory to include fertilizers that are imported and sold under scope 3 category 11 use of sold products. In the previous years we only calculated the amount of fertilizers produced and sold. We have also extended the Scope of our Scope 3 Category 1 GHG emissions.

C5.1c

(C5.1c) Have your organization's base year emissions been recalculated as result of the changes or errors reported in C5.1a and C5.1b?

	Base year recalculation	Base year emissions recalculation policy, including significance threshold
Row 1	Yes	If the structural changes have an impact of over 3% in Scope 1 and Scope 2 GHG emissions, base year emissions are recalculated. If the structural changes have an impact of over 5% in total Scope 3 GHG emissions, base year emissions are recalculated. The changes only effect one category of Scope 3 GHG emissions, however it is the most significant category which makes up 72% of our Scope 3 GHG emissions, so the base year (2020) emissions are recalculated.

C5.2

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

Scope 1

Base year start

January 1, 2016

Base year end

December 31, 2016

Base year emissions (metric tons CO2e)

1,052,536.49

Comment

Scope 2 (location-based)

Base year start
January 1, 2016

Base year end
December 31, 2016

Base year emissions (metric tons CO2e)
45,049.57

Comment

Scope 2 (market-based)

Base year start
January 1, 2016

Base year end
December 31, 2016

Base year emissions (metric tons CO2e)
45,049.57

Comment
As energy attribute certificates in the form of I-RECs are now available in Turkey, starting from 2020, we are also reporting a market-based figure.

However, other than I-REC certificates, other market-based data like supplier data or residual mix factors are still not available in Turkey and in other countries that we work in. Therefore, we have used the location-based results as a proxy since a market- based result cannot be calculated.

Scope 3 category 1: Purchased goods and services

Base year start
January 1, 2020

Base year end
December 31, 2020

Base year emissions (metric tons CO2e)
1,474,409.49

Comment
The scope of this category is expanded in 2021, therefore base year (2020) emissions were re-calculated. We have included Urea and Ammonium Sulphate purchases in this category.

Scope 3 category 2: Capital goods

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

0

Comment

No significant capital goods purchases in the base year.

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

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

170,133.44

Comment

WTT emissions of fuel and electricity. No change in this category.

Scope 3 category 4: Upstream transportation and distribution

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

92,526.27

Comment

Our main operations where there is significant amount of transportation and distribution activities are Toros Agri and Tekfen Agri. The calculations are made using average distances.
No changes in this category.

Scope 3 category 5: Waste generated in operations

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

16,543.96

Comment

The GHG emissions for the waste generated in our operations.
No changes in this category.

Scope 3 category 6: Business travel

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

548.9

Comment

GHG emissions from flights.
No changes in this category.

Scope 3 category 7: Employee commuting

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

4,441.13

Comment

Employee commuting data collected from service providers.
No changes in this category.

Scope 3 category 8: Upstream leased assets

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

0

Comment

As we are using the Operational Control method to compile our GHG Inventory, the GHG emissions that result from the operation of leased assets are reported under

Scope 1 and Scope 2 emissions, because they are controlled by TEKFEN. Therefore, Scope 3 emissions from upstream leased assets are not relevant to our operations.
No changes in this category.

Scope 3 category 9: Downstream transportation and distribution

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

6,182.28

Comment

Transportation of goods of Toros Agri and Tekfen Agri.
No changes in this category.

Scope 3 category 10: Processing of sold products

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

0

Comment

We do not produce or sell products that are later processed. Therefore, this category is not relevant for our business.
No changes in this category.

Scope 3 category 11: Use of sold products

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

3,403,259.08

Comment

We have expanded the scope of our Scope 3 Category 11 calculations to include fertilizers that are imported and sold. In the previous years we only calculated the amount of fertilizers produced and sold.

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

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

0

Comment

In Tekfen and Toros Agri our main products are fertilizers and fresh fruits, both of which don’t require any end of life treatment. The impact of our fertilizers is reported under the category "Use of Sold Products". Our construction projects also have a very long life-span therefore the end-of-life treatment for these projects is also not deemed relevant for our GHG inventory.
No changes in this category.

Scope 3 category 13: Downstream leased assets

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

3,937.08

Comment

The electricity and natural gas consumption figures for our downstream leased assets.
No changes in this category.

Scope 3 category 14: Franchises

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

7,145.34

Comment

The GHG emissions resulting from the electricity consumption of our franchises.
No changes in this category.

Scope 3 category 15: Investments

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

0

Comment

Emissions from investments are not relevant. After an investment or an acquisition, we include the relevant emissions under Scope 1 and 2 Reporting boundary. Therefore, we do not currently have Scope 3 category emissions under this category. However, this will be considered if such a case takes place in the future.
No changes in this category

Scope 3: Other (upstream)

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

0

Comment

There are no additional sources of Scope 3 emissions from our operations.
No changes in this category.

Scope 3: Other (downstream)

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

0

Comment

There are no additional sources of Scope 3 emissions from our operations.
No changes in this category.

C5.3

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

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

C6. Emissions data

C6.1

(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)

1,112,047.64

Comment

Our gross global Scope 1 emissions are equal to our net global Scope 1 emissions as we have not purchased any GHG emission reduction certificates.
There are no exclusions in our Scope 1 GHG emissions.

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 are reporting a Scope 2, market-based figure

Comment

As energy attribute certificates in the form of I-RECs are now available in Turkey, starting from 2020, we are also reporting a market-based figure.

C6.3

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

Reporting year

Comment

In 2021 we have started purchasing I-rec certificates.
Other than I-REC certificates, other market-based data like supplier specific data or residual mix emission factors are still not available in Turkey and in other countries that we work in. Therefore, we have used the location-based emission factor as a proxy

since a market-based result cannot be calculated.

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

Emissions in reporting year (metric tons CO2e)

1,286,446.41

Emissions calculation methodology

Average data method

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

100

Please explain

The scope of calculation is expanded for this category in 2021. We have included Urea and Ammonium Sulphate purchased by Toros Agri in our calculations. We have also revised the calculations for the previous year, however as the previous year (2020) was the base year, the revised calculations are reported under C5.2 of this report.

Activity data:
The activity data collected consists of the amount of ammonia, urea and ammonium sulphate purchased by Toros Agri and the construction materials purchased by Tekfen Construction, and Tekfen Manufacturing. The activity data is collected in tons. All of the consumed materials are assumed to be comprised of primary materials.
As all of the activity data is collected from supplier specific records like invoices we assume 100% of the emissions are calculated using supplier specific data.

Emission Factors:

For Toros Agri: Ammonia, urea and ammonium sulphate emission factors are taken from Fertilizers Europe online calculator. Emission factors are selected according to the

origin of goods purchased as the fossil fuels used for the production differ across different regions of the world.

For Tekfen Construction and Tekfen Manufacturing: The emission factors are taken from DEFRA's "Conversion Factors 2021 Full Set for Advanced Users" Material Use tab. The emission factors for primary materials are used. According to DEFRA's definitions, these emission factors cover the extraction, primary processing, manufacturing, and transporting materials to the point of sale. For the emission factors published by DEFRA, the GWPs used in the calculation of CO2e are based on the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) over a 100-year period. The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Capital goods

Evaluation status

Not relevant, explanation provided

Please explain

During the reporting year, there were no significant capital goods purchases, therefore this category is not relevant for the reporting year. Emissions from the use of capital goods are accounted for in Scope 1.

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

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

155,281.91

Emissions calculation methodology

Fuel-based method

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

100

Please explain

Activity data:
The following activity data are included in the fuel and energy-related Scope 3 emissions:
1. For the calculation of upstream emissions of purchased fuels (well to tank -WTT- emissions), the fossil fuel consumption figures that were used for the calculation of stationary and mobile combustion emissions under Scope 1 are used.
2. For upstream emissions of purchased electricity and transmission & distribution losses, the electricity consumption figures used to calculate the Scope 2 emissions are used.
3. For the generation of purchased electricity that is sold to end-users, as this category

only applies to Toros Agri, the amount of electricity they have sold to end users is collected.

Emission Factors: The emission factors for calculation of all fuel and energy-related activities including WTT emissions of fossil fuels and electricity and T&D losses are taken from DEFRA's "Conversion Factors 2021 Full Set for Advanced Users" WTT fuels and WTT UK&Overseas Electricity tab. According to DEFRA's definitions, these emission factors include Scope 3 emissions associated with extraction, refining, and transportation of the raw fuel sources to an organization. For the emission factors published by DEFRA, the GWPs used in the calculation of CO2e are based on the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) over a 100-year period. The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

59,377.44

Emissions calculation methodology

Distance-based method

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

100

Please explain

Activity data:
Our main operations where there is significant amount of transportation and distribution activities are Toros Agri and Tekfen Agri. The means of transport used are ground (HGVs and Refrigerated HGVs), Aircraft Carriers, and Marine Vessels. The data collected are average travel distances for each shipment and average load for each shipment. 100% of the average travel distances are obtained from the transportation service provider.

Emission Factors:
The emission factors for calculation of transportation and distribution activities are taken from DEFRA's "Conversion Factors 2021 Full Set for Advanced Users" Freighting Goods tab. For ground transportation, the vehicles are assumed to be 100% Laden. Most of the transportation activities are reported under the upstream category because according to GHG Protocol Scope 3 Standard the transportation services which are purchased by the reporting company shall be reported under the Upstream Transportation and distribution category (even if it is downstream transportation of products to end-users). Transportation activities that are done by our own vehicles are

reported under Scope 1. For the emission factors published by DEFRA, the GWPs used in the calculation of CO2e are based on the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) over a 100-year period. The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Waste generated in operations

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

10,864.74

Emissions calculation methodology

Waste-type-specific method

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

100

Please explain

Activity data:
The activity data for the waste generated in our operations are collected according to the waste type and method of disposal (i.e. landfill, recycling, etc.) in tons.

Emission Factors: The emission factors for calculation of emissions from the waste generated in operations are taken from DEFRA's "Conversion Factors 2021 Full Set for Advanced Users" Waste tab. For the emission factors published by DEFRA, the GWPs used in the calculation of CO2e are based on the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) over a 100-year period. The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.
We have Waste Management Systems in all of the sites/ facilities that are under our operational control. All the waste resulting from our activities is included in our calculations.
The management of the waste resulting from the operations of our subcontractors is also performed by us. Therefore, all the waste info including the waste generated in the operations of our subcontractors is included in this calculation.

Business travel

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

678

Emissions calculation methodology

Distance-based method

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

100

Please explain

Activity Data:
We obtain flight information from our travel agency. (Departure and destination ports, flight class, number of trips). We then use International Civil Aviation Organisation (ICAO) website to calculate flight distance. This category includes business flight data of Tekfen employees. No other means of transport is used for business travel. Some employees use company cars for travel and these figures are reported under Scope 1 emissions. 100% of the flight information is obtained from our travel agency.

Emission Factors:
The emission factors for calculation of emissions from business travel are taken from DEFRA's "Conversion Factors 2021 Full Set for Advanced Users" Business Travel-air tab. The EFs with radiative forcing are used for the calculations. The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Employee commuting

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

5,974.57

Emissions calculation methodology

Distance-based method

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

100

Please explain

Activity Data:
We obtain 100% of the employee commuting distance information from our service providers as activity data.

Emission Factors:
The emission factors for calculation of emissions from the waste generated in operations are taken from DEFRA's "Conversion Factors 2021 Full Set for Advanced

Users". The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

As we are using the Operational Control method to compile our GHG Inventory, the GHG emissions that result from the operation of leased assets are reported under Scope 1 and Scope 2 emissions, because they are controlled by TEKFEN. Therefore, Scope 3 emissions from upstream leased assets are not relevant to our operations.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

5,353.46

Emissions calculation methodology

Distance-based method

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

100

Please explain

Activity data:
Our main operations where there is significant amount of transportation and distribution activities are Toros Agri and Tekfen Agri. The means of transport used are ground (HGVs) and Marine Vessels. The data collected are average travel distances for each shipment and average load for each shipment. 100% of the average travel distances are obtained from the transportation service provider.

Emission Factors:
The emission factors for calculation of transportation and distribution activities are taken from DEFRA's "Conversion Factors 2021 Full Set for Advanced Users" Freighting Goods tab. For ground transportation, the vehicles are assumed to be 100% Laden. The transportation services that are not purchased by Tekfen are reported under this category. Most of the transportation activities are reported under the upstream category because according to GHG Protocol Scope 3 Standard the transportation services which are purchased by the reporting company shall be reported under the Upstream Transportation and distribution category (even if it is downstream transportation of products to end-users).
Transportation activities that are done by our own vehicles are reported under Scope 1.
For the emission factors published by DEFRA, the GWPs used in the calculation of

CO2e are based on the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) over a 100-year period. The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

We do not produce or sell products that are later processed. Therefore, this category is not relevant for our business.

Use of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

3,121,369.39

Emissions calculation methodology

Average product method
Fuel-based method

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

0

Please explain

GHG emissions from synthetic fertilizers consist of direct and indirect nitrous oxide (N2O) emissions from nitrogen (N) added to agricultural soils by farmers. Specifically, N2O is produced by microbial processes of nitrification and de-nitrification, taking place on the addition site (direct emissions), and after volatilization/re-deposition and leaching processes (indirect emissions).
For the calculation of the GHG emissions resulting from the use of our fertilizers, we use “Estimating Greenhouse Gas Emissions in Agriculture” document published by Food and Agriculture Organization of the United Nations (FAO).
This category also includes the use of fossil fuels sold from our gas stations.

Activity data:
As activity data, we use the amount of Nitrogen-based fertilizers sold and the % of Nitrogen in the sold products. For the fossil fuels that are sold in our gas stations, we obtain a database of our sold products from our petrol stations and organized industrial zone.

Emission Factors:
The Global EF default values are taken from IPCC, 2006, Vol 4, Ch.11 Table 11.1.

We apply IPCC default fuel emission factors and DEFRA 2021 conversion factors for calculating Scope 3 emissions under this category. For the use of sold fertilizers, the calculation was conducted according to the methodology outlined in “Estimating Greenhouse Gas Emissions in Agriculture” published by Food and Agriculture Organization of the United Nations.
For the use of fossil fuels sold, the calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard

The scope of this category was expanded in 2021 to include the fertilizers that we import and sell as well. The base year (2020) emissions were also recalculated. Base year emissions given under Section 5 are the revised calculations.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Please explain

In Tekfen and Toros Agri our main products are fertilizers and fresh fruits, both of which don’t require any end of life treatment. The impact of our fertilizers is reported under the category "Use of Sold Products".
Our construction projects also have a very long life-span therefore the end-of-life treatment for these projects is also not deemed relevant for our GHG inventory.

Downstream leased assets

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

4,244.06

Emissions calculation methodology

Fuel-based method

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

100

Please explain

Activity Data:
The electricity and natural gas consumption figures for our downstream leased assets are obtained as activity data. This category does not include GHG emissions resulting from the use of electricity sold to 3rd parties, which is reported under Category 3 as per GHG Protocol Corporate Value Chain Standard.

Emission Factors: The GHG emission factors published by IEA and IPCC are used to

calculate the GHG emissions from our downstream leased assets. The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Franchises

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

6,556.15

Emissions calculation methodology

Fuel-based method

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

100

Please explain

Activity Data:
The electricity consumption figures of our franchises are collected in MWh directly from our franchisors (Toros Agri's authorized dealers and sellers).

Emission Factors:
The GHG emission factors published by IEA are used to calculate the GHG emissions from our franchises. The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Investments

Evaluation status

Not relevant, explanation provided

Please explain

Emissions from investments are not relevant. After an investment or an acquisition, we include the relevant emissions under Scope 1 and 2 Reporting boundary. Therefore, we do not currently have Scope 3 category emissions under this category. However, this will be considered if such a case takes place in the future.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Please explain

There are no additional sources of Scope 3 emissions from our operations.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

There are no additional sources of Scope 3 emissions from our operations.

C6.7

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

Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	23,419.4	The biogenic carbon data comes from Gonen and Meram Renewable Energy's biomass operations. All the raw materials used in the plant are obtained from cattle and chicken farms, agricultural operations, and food factories in the vicinity of the plant. The biomass obtained is treated via anaerobic digestion process. The resulting biogas and biomethane are utilized to produce heat and electricity. GHG emissions related to biogenic carbon are calculated using DEFRA out-of-scope emission factors for biogas and biomethane. The amount of biogas and methane produced in the reporting period is multiplied by these emission factors.

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

0.00062449

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

1,144,020.54

Metric denominator

unit total revenue

Metric denominator: Unit total

1,831,923,846

Scope 2 figure used

Market-based

% change from previous year

8.25

Direction of change

Decreased

Reason for change

Our total Scope 1 and Scope 2 emissions have increased by 5.19%. On the other hand, emission intensity (per revenue) has decreased by 8.25%.
The main reason for the stated decrease is 14.64% increase in our revenues.
Another reason for the decrease is our GHG emission reduction projects detailed under C4.3c of this report. We have also started using energy attribute certificates in 2021.

C7. Emissions breakdowns

C7.1

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

Yes

C7.1a

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

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	192,319.76	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	914,343.5	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	225.19	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	5,164.12	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Turkey	940,489.45
Qatar	52,163.28
Kazakhstan	28,574.37
Azerbaijan	282.11
Saudi Arabia	65,897.69
Iraq	434.19
Russian Federation	24,206.54

C7.3

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

By business division

C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
Tekfen Holding	131.64
Engineering and Contracting	174,386.23
Chemical Industry	931,261.53
Agricultural Production	6,209.34
Services and Investment	58.9

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	Comment
Chemicals production activities	929,810.14	Scope 1 GHG emissions resulting from fertilizer production in our Toros Agri Mersin, Samsun, and Ceyhan plants.

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Turkey [1]	27,200	26,039.64
Qatar [2]	1,358.36	1,358.36
Kazakhstan [3]	0	0
Azerbaijan [4]	429.73	429.73
Saudi Arabia [5]	893.24	893.24
Iraq [6]	0	0
Russian Federation [7]	3,251.93	3,251.93

[1] As energy attribute certificates in the form of I-RECs are now available in Turkey, starting from 2020, we are also reporting a market-based figure.

However, other than I-REC certificates, other market-based data like supplier data or residual mix factors are still not available in Turkey and in other countries that we work in. Therefore, we have used the location-based results as a proxy since a market- based result cannot be calculated.

[2] We have used the location-based results as a proxy since a market- based result cannot be calculated.

[3] We have used the location-based results as a proxy since a market- based result cannot be calculated.

[4] We have used the location-based results as a proxy since a market- based result cannot be calculated.

[5] We have used the location-based results as a proxy since a market- based result cannot be calculated.

[6] We have used the location-based results as a proxy since a market- based result cannot be calculated.

[7] We have used the location-based results as a proxy since a market- based result cannot be calculated.

C7.6

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

By business division

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)
Tekfen Holding	306.38	306.38
Engineering and Contracting	7,729.26	6,568.9
Chemical Industry	21,193.55	21,193.55
Agricultural Production	3,897.5	3,897.5
Services and Investment	6.56	6.561

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

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

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Chemicals production activities	17,132.92	17,132.92	Purchased electricity-related CO2 emissions from our 3 fertilizer production facilities in Samsun, Mersin, and Ceyhan. As energy attribute certificates in the form of I-RECs are now available in Turkey, starting from 2020, we are also reporting a market-based figure. However, other than I-REC certificates, market-based data like supplier data or residual mix factors are still not available in Turkey and in other countries that we work in. Therefore, we have used the location-based results as a proxy

			since a market-based result cannot be calculated.

C-CH7.8

(C-CH7.8) Disclose the percentage of your organization's Scope 3, Category 1 emissions by purchased chemical feedstock.

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e from purchased feedstock	Explain calculation methodology
Ammonia	67.64	The amount of ammonia purchased during the reporting period is collected using the data obtained from the shipping company. The ammonia purchased in tons is categorized according to the origin of the purchase. Ammonia emission factors are taken from the Fertilizers Europe online calculator. Emission factors are selected according to the origin of Ammonia purchased as the fossil fuels used for the production differ across different regions of the world. The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.
Other (please specify) Urea	7.4	The amount of urea purchased during the reporting period is collected using the data obtained from the shipping company. The urea purchased in tons is categorized according to the origin of the purchase. Urea emission factors are taken from the Fertilizers Europe online calculator. Emission factors are selected according to the origin of Urea purchased as the fossil fuels used for the production differ across different regions of the world. The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.
Other (please specify) Ammonium Sulphate	5.39	The amount of ammonium sulphate purchased during the reporting period is collected using the data obtained from the shipping company. The ammonium sulphate purchased in tons is categorized according to the origin of the purchase. Ammonium sulphate emission factors are taken from the Fertilizers Europe online calculator. Emission factors are selected according to the origin of purchase as the fossil fuels

		used for the production differ across different regions of the world. The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

C-CH7.8a

(C-CH7.8a) Disclose sales of products that are greenhouse gases.

	Sales, metric tons	Comment
Carbon dioxide (CO2)	0	We do not sell products that are greenhouse gases.
Methane (CH4)	0	We do not sell products that are greenhouse gases.
Nitrous oxide (N2O)	0	We do not sell products that are greenhouse gases.
Hydrofluorocarbons (HFC)	0	We do not sell products that are greenhouse gases.
Perfluorocarbons (PFC)	0	We do not sell products that are greenhouse gases.
Sulphur hexafluoride (SF6)	0	We do not sell products that are greenhouse gases.
Nitrogen trifluoride (NF3)	0	We do not sell products that are greenhouse gases.

C7.9

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

Increased

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	3,933.94	Decreased	0.36	Toros Agri Samsun and Mersin Plants recover waste heat to produce electricity in Steam Turbine Generator (STG) Unit. Our Ceyhan plant has a small Solar PV. Also in Gonen and Meram Renewable Energy, we produce energy from biomass. In 2020 these 5 plants have produced 250,174.86 MWh of renewable energy. In 2021 this value has increased to 258,391.11 MWh. So, in 2021 we have

				produced 8,216.25 MWh more renewable energy than in 2020 which resulted in a decrease of 3,399.94 tCO2e in our GHG emissions. Our total Scope 1 and Scope 2 GHG emissions in 2020 was: 1,087,617 tCO2e. The decrease percentage was calculated as follows: 8,216.25 tCO2e/ 1,0587,617 tCO2e * 100 = 0.36%.
Other emissions reduction activities	2,139	Decreased	0.2	Our Scope 1+Scope 2 emissions were 1,087,617 tCO2e in 2020. In 2021, we have implemented 6 emissions reduction initiatives, resulting in a total of 2,139 t CO2e reduction. The decrease percentage was calculated as follows: 2,139 tCO2e / 1,087,617 tCO2e * 100 = 0.20%.
Divestment	0	No change	0	No divestments in 2021.
Acquisitions	0	No change	0	No acquisitions in 2021.
Mergers	0	No change	0	No mergers in 2021.
Change in output	62,476	Increased	5.74	In 2021our process (N2O) emissions in our Mersin plant has increased from 819,577 tCO2e to 912,243 tCO2e as a result of the increase in production. Which resulted in 92,666 tCO2e increase in our emissions. On the other hand, some of the Tekfen Construction projects were finalized reducing the total Scope 1+Scope 2 GHG emissions of Tekfen Construction by 35,386 tCO2e decrease in our emissions. Remaining 5,197 tCO2e increase is due to increased production in all of our operations. As 2020 was the year of Covid-19 crisis there were disruptions in operations, and we returned to normal levels of operations in 2021. Therefore the net increase amount is = 92,666 - 35,386+5,197 = 62,476

				tCO2e The increase percentage was calculated as follows: 62,476 tCO2e/ 1,087,617 tCO2e * 100 = 5.74%.
Change in methodology	0	No change	0	No change in methodology.
Change in boundary	0	No change	0	No change in boundary.
Change in physical operating conditions	0	No change	0	No change in physical operating conditions.
Unidentified	0	No change	0	No unidentified changes
Other	0	No change	0	No other changes.

C7.9b

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

Location-based

C8. Energy

C8.1

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

More than 0% but less than or equal to 5%

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)	38,224	763,548.7	801,772.7
Consumption of purchased or acquired electricity		2,690.37	74,439.07	77,129.44
Consumption of self-generated non-fuel renewable energy		145,371.82		145,371.82
Total energy consumption		186,286.19	837,987.77	1,024,273.96

C-CH8.2a

(C-CH8.2a) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.

Consumption of fuel (excluding feedstocks)

Heating value

LHV (lower heating value)

MWh consumed from renewable sources inside chemical sector boundary

0

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

75,793.02

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

75,793.02

Consumption of purchased or acquired electricity

MWh consumed from renewable sources inside chemical sector boundary

0

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

39,723.9

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

39,723.9

Consumption of self-generated non-fuel renewable energy

MWh consumed from renewable sources inside chemical sector boundary

145,371.82

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

0

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

145,371.82

Total energy consumption

MWh consumed from renewable sources inside chemical sector boundary

145,371.82

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

115,516.93

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

260,888.75

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	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

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	467,926.66	354,907.38	258,391.11	145,371.82
Heat	78,985.48	78,985.48	0	0
Steam	20,445.35	20,445.35	0	0
Cooling	0	0	0	0

C-CH8.2d

(C-CH8.2d) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

Electricity

Total gross generation inside chemicals sector boundary (MWh)

220,252.36

Generation that is consumed inside chemicals sector boundary (MWh)

141,484.67

Generation from renewable sources inside chemical sector boundary (MWh)

220,000

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Heat

Total gross generation inside chemicals sector boundary (MWh)

55,262.42

Generation that is consumed inside chemicals sector boundary (MWh)

55,262.42

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Steam

Total gross generation inside chemicals sector boundary (MWh)

20,445.35

Generation that is consumed inside chemicals sector boundary (MWh)

20,445.35

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Cooling

Total gross generation inside chemicals sector boundary (MWh)

0

Generation that is consumed inside chemicals sector boundary (MWh)

0

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method

Unbundled energy attribute certificates (EACs) purchase

Energy carrier

Electricity

Low-carbon technology type

Hydropower (capacity unknown)

Country/area of low-carbon energy consumption

Turkey

Tracking instrument used

I-REC

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

2,690.37

Country/area of origin (generation) of the low-carbon energy or energy attribute

Turkey

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,015

Comment

Tekfen construction has purchased irec certificates from Göktaş HEPP for the total consumption amount of GAT Guney Anadolu Main Repair and Maintenance Yard & Ceyhan Fabrication Facility.

C8.2g

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

Country/area
Turkey

Consumption of electricity (MWh)
208,540.26

Consumption of heat, steam, and cooling (MWh)
0

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

208,540.26

Country/area
Qatar

Consumption of electricity (MWh)
2,837

Consumption of heat, steam, and cooling (MWh)
0

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

2,837

Country/area
Saudi Arabia

Consumption of electricity (MWh)
1,451

Consumption of heat, steam, and cooling (MWh)
0

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

1,451

Country/area

Kazakhstan

Consumption of electricity (MWh)

0

Consumption of heat, steam, and cooling (MWh)

0

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

0

Country/area

Azerbaijan

Consumption of electricity (MWh)

978

Consumption of heat, steam, and cooling (MWh)

0

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

978

Country/area

Russian Federation

Consumption of electricity (MWh)

8,695

Consumption of heat, steam, and cooling (MWh)

0

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

8,695

Country/area

Iraq

Consumption of electricity (MWh)

0

Consumption of heat, steam, and cooling (MWh)

0

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

0

C-CH8.3

(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?

No

C9. Additional metrics

C9.1

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

Description

Energy usage

Metric value

1,024,273.96

Metric numerator

Total energy consumption in MWh

Metric denominator (intensity metric only)

No denomitator. Not an intensity metric.

% change from previous year

7.8

Direction of change

Decreased

Please explain

In 2020 our total energy consumption was 1,111,233.26 MWh. This value decreased by 7.8% in 2021.

C-CH9.3a

(C-CH9.3a) Provide details on your organization's chemical products.

Output product

Nitric acid

Production (metric tons)

390,740

Capacity (metric tons)

405,280

Direct emissions intensity (metric tons CO2e per metric ton of product)

2.33

Electricity intensity (MWh per metric ton of product)

0.14

Steam intensity (MWh per metric ton of product)

0

Steam/ heat recovered (MWh per metric ton of product)

0.1013

Comment

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

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

	Investment in low-carbon R&D	Comment
Row 1	Yes	We have an R&D center in Mersin as part of our Agri-Industry Activities. In the reporting period, as a result of the R&D activities held, the specialty fertilizer portfolio was enriched by the addition of Smart Urea and Smart N21 which are slow-release fertilizers. Studies show that depending on circumstances in cultivation, slow-release fertilizers can reduce denitrification and greenhouse gas emission by up to 40%. In 2020 we have also signed a 5-year agreement with The Scientific and Technological Research Council of Turkey (TUBİTAK), to develop projects on sustainability-related issues including sustainable environment issues like waste management, water treatment technologies, and alternative energy technologies like biomass-based technologies and renewable energy. This agreement also includes research and development of projects that will reduce our direct and value chain GHG emissions.

		HiFlex Project-Tekfen engineering has worked in a project designed to reduce the Barilla's carbon footprint in the production of pasta, as part of its drive towards sustainable production. One of the most important components of the 'HiFlex Project', initiated by Barilla in Foggia (Italy) and supported by the EU, is the concentration of solar power (CSP), and it is in this area that Tekfen Engineering has taken on a role. The project, in which 11 companies from 7 countries are taking part on a co-operative basis, will lead to the construction of a new facility producing renewable energy. Tekfen Engineering is to use particle technology – a world first – and is to be responsible for all engineering work in connection with the building of a solar energy concentration plant around 7500 square metres in area that will be able to follow the sun in both directions, a plant of this kind being known as a 'heliostat'.

C-CH9.6a

(C-CH9.6a) Provide details of your organization's investments in low-carbon R&D for chemical production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Product redesign	Small scale commercial deployment	≤20%	895,641	As part of our highest efforts to continuously work on developing new and more environmentally friendly products, we have invested in an R&D Center in Mersin as part of our fertilizer production practices which began working in 2017. A team of 29 peers work full-time at the R&D Centre to develop new ecofriendly products that will contribute to agricultural efficiency. In addition to the studies on how to improve the existing products, work is done on developing domestic production of the products produced abroad, on improvement of production processes, optimisation, energy saving, and minimizing the

				environmental effects. In addition, collaborations with local and foreign scientific institutions and universities are carried out for projects that will support agricultural development in line with the vision of sustainable agriculture. For example, in the reporting period, as a result of the R&D activities held, the specialty fertilizer portfolio was enriched by the addition of Smart Urea and Smart N21 which are slow release fertilizers. Studies show that depending on circumstances in cultivation, slow release fertilizers can reduce denitrification and greenhouse gas emission by up to 40%. In the reporting year, sales of these specialty fertilizers went up by 61.2% with respect to 2020. Also, within the scope of the TUBİTAK 1505 University-Industry Cooperation Support Programme, preparations for a joint project with Ankara University have been completed. As for the organo-mineral fertilizer studies, a joint project submission with Çukurova University was accepted under the call of TAGEM 2020. As one of the important developments of 2020, the R&D greenhouse investment was completed and put into service. In the greenhouse, where scientific trials and product development studies for various fertilizer formulations will be carried out, studies have been initiated in the scope of liquid organo-mineral fertilizers, different fertilizer formulations with inhibitors, compound fertilizers with different

				sources of zinc, and products with different microbial content. Toros Agri's R&D Centre also contributes to plant nutrition and the agriculture sector with many international academic publications and shares its outputs with the scientific world at academic events. The R&D budget dedicated to the Center was USD 895,641 in the reporting period.

C-CN9.6a/C-RE9.6a

(C-CN9.6a/C-RE9.6a) Provide details of your organization's investments in low-carbon R&D for real estate and construction activities over the last three years.

Technology area

Other, please specify

(Integration of renewable energy sources in industry)

Stage of development in the reporting year

Pilot demonstration

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

≤20%

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

Comment

The Hi-Flex (High Storage Density Solar Power Plant for FLEXible Energy Systems) project is a tower type concentrated solar power plant to be built to supply operating steam to the Barilla Foggia pasta factory in Italy. This system, which has not yet been commercialized, is the first worldwide by using particle technology; It will be developed, built and implemented with 11 partners from 7 different nations. The demonstration plant with 20 MWh thermal energy storage, 7000m2 heliostat field, and a 2.5 MWth receiver includes all components of a commercial-scale plant except for the state-of-the-art steam turbine. According to first assumptions, Hi-Flex project will meet the 6% of annual thermal energy for the pasta factory and will save 300.000 Sm3/year natural gas, also project will reduce carbon foot print approximately 800 tCO2eq/year.

C10. Verification

C10.1

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

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

C10.1a

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

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

2021_Samsun_Scope_1_GHG Verification Report.pdf
2021_Ceyhan_Scope_1_GHG Verification Report.pdf
2021_Mersin_Scope_1_GHG Verification Report.pdf
Toros Samsun CDP-Scope 1.pdf
Toros Ceyhan CDP-Scope1.pdf
Toros Mersin CDP-Scope 1.pdf

Page/ section reference

Page 2 in CDP verification templates. Page 3 in Verification reports.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

84

C10.1b

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

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

- Tekfen Agri Karaman Scope 2 CDP Verification Letter.pdf
- Toros Mersin Scope 2 CDP Verification Letter.pdf
- Tekfen Construction Ceyhan Scope 2 CDP Verification Letter.pdf
- Toros Gonen Scope 2 CDP Verification Letter.pdf
- Tekfen Agri Adana Scope 2 CDP Verification Letter.pdf
- Toros Torba Scope 2 CDP Verification Letter.pdf
- Tekfen Construction GAT Scope 2 CDP Verification Letter.pdf
- Tekfen Agri Antalya Scope 2 Verification Certificate.pdf
- Toros Samsun Scope 2 Verification Certificate.pdf
- Tekfen Agri Karaman Scope 2 Verification Certificate.pdf
- Tekfen Agri Adana Scope 2 Verification Certificate.pdf
- Toros Ceyhan Scope 2 CDP Verification Letter.pdf
- Toros Torba Scope 2 Verification Certificate.pdf
- Toros Ceyhan Scope 2 Verification Certificate.pdf
- Tekfen Agri Antalya Scope 2 CDP Verification Letter.pdf
- Toros Samsun Scope 2 CDP Verification Letter pdf.pdf
- Toros Gonen Scope 2 Verification Certificate.pdf
- Tekfen Construction HQ Verification Certificate.pdf
- Tekfen Construction GAT Scope 2 Verification Certificate.pdf
- Toros Mersin Scope 2 Verification Certificate.pdf

Tekfen Agri Nevsehir Scope 2 CDP Verification Letter.pdf
Tekfen Construction HQ Scope 2 CDP Verification Letter.pdf
Tekfen Construction Ceyhan Scope 2 Verification Certificate.pdf
Tekfen Agri Nevsehir Scope 2 Verification Certificate.pdf

Page/ section reference

The Scope 2 verifications were made separately for each location. Please see 2nd pages of each document. A total of 12 locations were verified covering 71.94 % of our total Location Based Scope 2 GHG emissions.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

72

Scope 2 approach

Scope 2 market-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

Tekfen Agri Karaman Scope 2 CDP Verification Letter.pdf
Toros Mersin Scope 2 CDP Verification Letter.pdf
Tekfen Construction Ceyhan Scope 2 CDP Verification Letter.pdf
Toros Gonen Scope 2 CDP Verification Letter.pdf
Tekfen Agri Adana Scope 2 CDP Verification Letter.pdf
Toros Torba Scope 2 CDP Verification Letter.pdf
Tekfen Construction GAT Scope 2 CDP Verification Letter.pdf
Tekfen Agri Antalya Scope 2 Verification Certificate.pdf
Toros Samsun Scope 2 Verification Certificate.pdf
Tekfen Agri Karaman Scope 2 Verification Certificate.pdf
Tekfen Agri Adana Scope 2 Verification Certificate.pdf
Toros Ceyhan Scope 2 CDP Verification Letter.pdf

Toros Torba Scope 2 Verification Certificate.pdf
Toros Ceyhan Scope 2 Verification Certificate.pdf
Tekfen Agri Antalya Scope 2 CDP Verification Letter.pdf
Toros Samsun Scope 2 CDP Verification Letter pdf.pdf
Toros Gonen Scope 2 Verification Certificate.pdf
Tekfen Construction HQ Verification Certificate.pdf
Tekfen Construction GAT Scope 2 Verification Certificate.pdf
Toros Mersin Scope 2 Verification Certificate.pdf
Tekfen Agri Nevsehir Scope 2 CDP Verification Letter.pdf
Tekfen Construction HQ Scope 2 CDP Verification Letter.pdf
Tekfen Construction Ceyhan Scope 2 Verification Certificate.pdf
Tekfen Agri Nevsehir Scope 2 Verification Certificate.pdf

Page/ section reference

The Scope 2 verifications were made separately for each location. Please see 2nd pages of each document. A total of 12 locations were verified covering 71.22 % of our total Market Based Scope 2 GHG emissions. In locations where there are no irec purchases, the market based emissions are equal to location based emissions.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

71

C10.1c

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

Scope 3 category

Scope 3: Purchased goods and services
Scope 3: Capital goods
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
Scope 3: Upstream transportation and distribution
Scope 3: Waste generated in operations
Scope 3: Business travel
Scope 3: Employee commuting
Scope 3: Upstream leased assets
Scope 3: Investments
Scope 3: Downstream transportation and distribution
Scope 3: Processing of sold products

Scope 3: Use of sold products
Scope 3: End-of-life treatment of sold products
Scope 3: Downstream leased assets
Scope 3: Franchises

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

TEKFEN HOLDING Scope 3 Verification Certificate.pdf
TEKFEN HOLDING Scope 3 CDP Verification Letter.pdf

Page/section reference

Only Category 1 and Category 11 are verified. These 2 categories make up 92.53% of our total Scope 3 GHG emissions. To reflect the right percentage of verification all the categories are selected.
Verified figures can be found in 2nd pages of the attached documents.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

93

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?

No, but we are actively considering verifying within the next two years

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)?

No, but we anticipate being regulated in the next three years

C11.1d

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

Our fertilizer production operations are in the scope of Turkish GHG MRV Regulation, which is the basis for a future probable ETS that is in line with the EU ETS.
Recently as a part of the World Bank-funded “Partnership for Market Readiness” project, simulations of an ETS system were studied. The results of this study were also published on the Turkish Ministry of Environment and Urbanization website. We anticipate being regulated under the Turkish ETS system until 2023.

Also fertilizer industry is one of the pilot industries of EU Carbon Border Adjustment Mechanism (CBAM). The pilot phase of CBAM will be implemented between 2023-2026. Therefore, the implications of EU-CBAM will be more clear starting from 2023.

Regardless of the pricing mechanism to be introduced, we are already investing heavily in reducing our CO2 and N2O emissions and keeping our other emissions much below legal limits. We have approved an investment in a new N2O catalyzer system at our Mersin Fertilizer Production Plant that will reduce our N2O emissions by around 85-93%. N2O emissions comprise around 82% of our Scope 1 GHG emissions, and we believe we have a major opportunity for emission reduction in this Scope.

C11.2

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

No

C11.3

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

Yes

C11.3a

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

Objective for implementing an internal carbon price

Navigate GHG regulations
Change internal behavior
Drive energy efficiency
Drive low-carbon investment
Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Application

Agri-Industry: Toros Agri (N2O producing fertilizer business)

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

94.64

Variance of price(s) used

We use a variance of prices especially to understand the risks we may face with the emerging GHG regulations like Turkish ETS and EU-CBAM. We understand that different regions may have different prices per ton of CO2, also different applications may require various prices. This is why we have started using differentiated pricing and we also evaluate our carbon price annually.

For our operations in Turkey, we are using a variance of prices to calculate our exposure to risks related to emerging regulations. The minimum price we use (USD 3.57) is taken from an ETS simulation study performed under the PMR project. The max. price we use is taken from EU-ETS allowance rates (80€-94.64 USD). For EU-CBAM, we we use a floor price of 30 € (35.49 USD) and a max. price of 80 € (94.64 USD).

We also use the price of carbon for our GHG emission reduction projects in order to calculate expected income, for which we use the price of 6 USD/ton for VCS projects and 8.5 USD/ton for Gold Standard projects.

Type of internal carbon price

Shadow price
Implicit price

Impact & implication

In an ETS simulation study published under the PMR Project, scenarios included capping the emissions at 80%. The simulation also included a free allocation of 50% of the allowances. This results in a liability of about 60%. (20% reduction + (80%x50% = 40 % auction))

In 2021 the verified total N2O and CO2 emissions of the 3 plants owned by Toros Agri were equal to 928,397 tons of CO2e. 60% of which makes 557,038.20 tons of CO2e.

Using the above-mentioned prices, our min. liability is calculated as 3.77 million USD and our max. liability is calculated as 57.47 million USD. Both figures include the impacts of CBAM.

We presented these figures to the executive committee along with the Chairman of the Board and the implications of a possible carbon fee based on an internal carbon price.

Investment options to reduce this liability have been analyzed and the Board has approved an investment in a new catalyzer to drastically reduce our N2O emissions by

around 85-93%.

We use an implicit carbon price to quantify the capital investments that we are going to make especially in projects where we can also benefit from the sales of GHG emission reductions.

C12. Engagement

C12.1

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

Yes, our customers/clients

Yes, other partners in the value chain

C12.1b

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

Type of engagement & Details of engagement

Education/information sharing

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

% of customers by number

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

63.1

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

63.10% of Tekfen's Scope 3 emissions are from the use of fertilizers sold. The use of correct, timely, and adequate fertilizers is crucial to reducing Scope 3 emissions. Therefore, the awareness level of dealers and farmers are among the most important factors in reducing Scope 3 emissions from the use of fertilizers sold.

As part of Toros Agri activities, trainings are continuously provided to our ultimate customers, farmers, covering a wide range of agricultural topics which in return provides a contribution to economic and quality products in agricultural production through increasing awareness resulting in conscious production applications.

The increase in quantity and quality of produce yielded from a unit field, resulting from efficient and correct usage of fertilizers, water, and fuel to apply raw materials,

contributes to our efforts to enhance our climate change management practices.

Toros Agri, with this awareness, has been organizing nationwide “Farmer Training Meetings” continuously since the 1980s, when the company started its operations, to increase quality and hence contribute to farmer’s wealth and protect the environment. In the fertilizer sector, farmer-training seminars, first and solely applied by Toros Agri, are organized throughout Turkey, in countless cities and districts, and open to everyone. In addition to the seminars, thanks to meetings at village cafes and TV programs, Toros Agri has reached over hundred thousands of farmers until today. Toros Agri is in close cooperation with regional agricultural organizations in relation to this matter.

Toros Agri has also Toros Farmer App that shares educational information and recommendations about fertilizers with our registered farmers and distributors. With this APP we aim to contribute to Sustainable Development Goals (SDGs) 2, 4, 12, and 13.

We also educate our customers on the likely impacts of climate change on farming and how they should change/vary their methods based on changing climate trends, preparing them to become resilient to climate impacts. We believe that by raising awareness of our farmers using the fertilizers, we can reduce the related energy and water consumption.

Impact of engagement, including measures of success

By the end of 2021 Toros farmer App reached 19,417 active users. (2020: 11,938 active users)
In 2021, 5,398 visits to distributors across Turkey (2020: 4,960 visits), 7,975 visits and interviews with farmers (2019:5,286 visits/ interviews), 184 visits to agricultural institutions and 20 meetings with farmers were made.
The continuous increase in these numbers compared to the previous year is an indicator of success for us. Some success indicators as % of change from the previous year is given below:
- Number of active users using the app has increased by 62.65%
- Visits to distributors have increase by 8.83%
- Visits and interviews with farmers have increased by 50.87%

C12.1d

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

As part of engaging with its value chain on its climate-related efforts and strategy, Tekfen identifies several stakeholder groups namely; NGOs, Initiatives, Associations, Universities, Action Groups and International Collaborations on cutting-edge climate-related projects.

NGOs: In addition to our close relations with environmental NGOs, wWe are both founding member and member of some NGOs such as TEMA (Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats) who relentlessly combat deforestation.

Initiatives: We have joined the United Nations Global Compact (UNGC) on July 2018. By joining UNGC, the Group commits itself to increasing measures aimed at minimizing the environmental impact of its operations, formulating and adhering to sustainable production and consumption practices in the conduct of business processes, increasing stakeholders' awareness of potential environmental risks, and raising awareness of stakeholders about the benefits of cleaner, more eco-friendly technologies by using them itself.

Associations: We are a founding member of CEDBİK (Turkish Green Building Council), a professional association that champions eco-friendly green buildings, and actively take part in their effort to promote energy efficient building practices and standards. Moreover, we are a member of the Turkish Sustainable Development Business Council (SKD) at which we actively provide support as part of sustainable agriculture working group.

Universities: We believe know-how sharing is one of the most powerful tools to support our climate-related activities and collaboration with academia is the ultimate way to realize tangible impact. During the reporting period, within the scope of the TUBİTAK 1505 University-Industry Cooperation Support Programme, preparations for a joint project with Ankara University have been completed. As for the organo-mineral fertiliser studies, a joint project submission with Çukurova University was accepted under the call of TAGEM 2020
Tekfen Agri's collaborations with Sabancı University Nanotechnology Research and Application Centre, Akdeniz University Technology Transfer Office, Çukurova University, and TAGEM (General Directorate of Agricultural Researches and Policies) continued.

International Collaborations: As part of the Horizon 2020 Framework Programme for R&D from European Commission, Tekfen Agri is the only Turkish collaborator in a 9 Partnered project coordinated by The Partnership for Research and Innovation in the Mediterranean Area (PRIMA) named GENDIBAR. The project is the first international R&D collaboration of Tekfen. The main objective of the project is to provide new knowledge and fill the research gaps for adapting barley farming to the future environments to secure the production of cereal foods across Mediterranean countries. In the light of the climate projections and projected population increase, the sustainability of the barley production chain in the next decades will depend mainly on the crop's yield and productivity. Through this project, we aim to contribute to sustainable agriculture practices and enable energy and water savings while increasing the productivity of barley in the Mediterranean region

As a strategic decision showing our climate-related engagement strategy with other partners in the value chain, in 2019 Tekfen Engineering has partnered with 10 other companies for Hi-Flex (High Storage Density Solar Power Plant for FLEXible Energy Systems) project, in development of cutting-edge climate-related technologies. Hi-Flex is a tower type concentrated solar power plant project which will be built in Barilla's Foggia pasta factory in Italy to supply process steam. During the Hi-Flex project the worldwide first complete pre-commercial system using particle technology will be developed, built and demonstrated by eleven different partners; from seven different countries. The demonstration plant with 20 MWh thermal energy storage, 7000m2 heliostat field, and a 2.5 MWth receiver includes all components of a commercial-scale plant except for the state-of-the-art steam turbine. According to first

assumptions, Hi-Flex project will meet the 6% of annual thermal energy for the pasta factory and will save 300.000 Sm3/year natural gas, also project will reduce carbon foot print approximately 800.000 kgCO2eq/year.

In 2020 we have also signed a 5-year agreement with the The Scientific and Technological Research Council of Turkey (TUBITAK), to develop projects. This agreement also includes development of projects that will reduce our direct and value chain GHG emissions.

C12.2

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

Yes, suppliers have to meet climate-related requirements, but they are not included in our supplier contracts

C12.2a

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

Climate-related requirement

Complying with regulatory requirements

Description of this climate related requirement

Tekfen Group of Companies work with numerous suppliers. All of our suppliers are expected to comply with Tekfen's Code of Conduct and their compliance is audited. From a climate-change point of view, the effects of our suppliers are not equal. Therefore, we give utmost importance to the suppliers that have the highest effect on climate change. 50.3% of Tekfen's total revenue is realized by the Engineering and Contracting Group and Tekfen Construction assesses the suppliers to be critical and non-critical.

Tekfen Construction carries out Procurement and Supplier Management Strategies based on ethical and sustainability awareness. Tekfen conducts data-based supplier and procurement management, focusing on three principal components of sustainability in order to ensure real and long-term cooperation with its suppliers.

Tekfen uses a cloud-based Supplier Management System (SMS) which is utilized to evaluate Tekfen's current suppliers.

As a part of Tekfen's Code of Conduct, all suppliers are expected to comply with regulatory requirements and some of the critical suppliers are also expected to comply with relevant environmental standards. We request their certificates, send our suppliers self assessment questionnaires and also have a grievance mechanism for Tekfen

Construction projects.

In 2021 we didn't detect any non-compliance, hence we assume 100% of our suppliers were in compliance with the regulatory requirements.

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

100

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

100

Mechanisms for monitoring compliance with this climate-related requirement

Certification
Supplier self-assessment
Grievance mechanism/Whistleblowing hotline

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

Retain and engage

C12.3

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

Row 1

Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate

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

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

No, and we do not plan to have one in the next two years

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

Tekfen Group's main strategy is determined by the Holding BoD. Group Companies prepare 10 and 3-year strategic plans, which are in line with this strategy. These strategic plans are approved by the Group VPs & CEO. The responsibility for the implementation of the approved plans lies with the General Managers. Therefore, all practices are consistent with the Holding's strategy.

Compliance with the strategy determined by the Holding is carried out by the Internal

Audit Departments reporting to the BoD. Group VPs & CEO are also responsible for ensuring compliance.

Principles & commitments related to water are published in the Water Policy. Compliance with the Climate Policy is the responsibility of each company's General Manager.

It is the responsibility of HSE Department Managers in the Company/Workplaces to ensure compliance with water-related policies, legal regulations & other conditions determined by Tekfen Holding. The Holding, periodically conducts HSE audits to ensure compliance. The result of the audit carried out by the Holding HSE Coordinator is also reported to the CEO. The follow-up of the actions determined after the audit is carried out by the Holding HSE Coordinator. The CEO is informed about the actions that are not completed on time.

If inconsistencies prevail, issues are escalated to Group Company GM's and Group VPs with proposals to resolve them. If the inconsistencies cannot be resolved at this level, the situation is reported to the CEO.

C12.3c

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

Type of organization

Non-Governmental Organization (NGO) or charitable organization

State the organization to which you provided funding

Business Council for Sustainable Development Turkey-BCSD Turkey.

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

1,410

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

The provided funding figure is the membership fees paid to BCSD.
BCSD Turkey is the regional network and business partner of the World Business Council for Sustainable Development (WBCSD). The organization shares the sustainability experience brought by this cooperation with its members and stakeholders on various platforms through the activities of working groups. BCSD Turkey defends sustainable development as a prerequisite for the sound programming of our future, utilizing the country's resources more efficiently. The organization was aligned its goals with the United Nations Sustainable Development Goals in 2016. It carries out its

activities in 5 focus areas, including climate issues, within the framework of the UN Sustainable Development Goals.
BCSD Turkey is a respected stakeholder whose opinion is sought by public institutions and other organizations on climate change issues in Turkey. Tekfen is a member of BCSD Turkey since 2017. The organization oparates its climate change related studies by the Transition to Low Carbon Economy and Efficiency workin group and the Sustainable Agriculture and Access to Food working group.

Transition to Low Carbon Economy and Efficiency Working Group aims at sharing the knowledge & experience of the business world in the decision-making process for policies and regulations concerning climate change. Through this working group, BCSD Turkey endeavors to contribute to the discussions about climate change and to guide the business world in Turkey in their efforts to adapt to the developments in this area. Benefiting from the international structure of WBCSD, the Business Council in Turkey shares the good practices available in the whole world with its members, and it provides guidelines related to the transition to low carbon economy and efficiency.

Sustainable Agriculture and Access to Food Working Group aims to combat climate change with strategies such as reducing food waste, making necessary investments in efficient agricultural production methods, and protecting natural resources. BCSD Turkey played an active part in the COP12, and was one of the main partners of Sustainable Land Management Business Forum. During the Conference, BCSD Turkey pursued the objectives of addressing the issue from a business perspective, and including good practices from the world and from Turkey in the agenda. As a result of the Forum, Ankara Declaration, which expresses the position of businesses about land management is issued.

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

Yes, we have evaluated, and it is aligned

C12.4

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

Publication

In mainstream reports

Status

Complete

Attach the document

Tekfen Holding Annual Report-2021-English.pdf

Page/Section reference

151-153
196-197

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

2021 Annual Report is attached.

C15. Biodiversity

C15.1

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

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity
Row 1	Yes, both board-level oversight and executive management-level responsibility	We have a biodiversity policy which is signed by the CEO. Our CEO is the highest level responsible for biodiversity-related issues and he reports directly to the Board. Our Boad approves all our policies and Biodiversity is also included in our sustainability reports.

C15.2

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

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments
Row 1	Yes, we have made public commitments only	Commitment to respect legally designated protected areas

		Commitment to avoidance of negative impacts on threatened and protected species

C15.3

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

	Does your organization assess the impact of its value chain on biodiversity?
Row 1	No, and we do not plan to assess biodiversity-related impacts within the next two years

C15.4

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

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?
Row 1	No, we are not taking any actions to progress our biodiversity-related commitments, but we plan to within the next two years

C15.5

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

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No	

C15.6

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

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Content of biodiversity-related policies or commitments	Previous year's report is attached. Page 107 [1]

[1] TEKFEN Sustainability-report-2020-web.pdf

C16. Signoff

C-FI

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

I-REC certificates are attached

GAT_IREC (07-12_2021).pdf

CIF_IREC (07-12_2021).pdf

CIF_IREC (01-06_2021).pdf

GAT_IREC (01-06_2021).pdf

C16.1

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

	Job title	Corresponding job category
Row 1	CEO, Tekfen Group of Companies	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

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

Please confirm below

I have read and accept the applicable Terms