

Welcome to your CDP Climate Change Questionnaire 2020

C0. Introduction

C0.1

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

Established in 1956, Tekfen Group of Companies operates in three core business areas: Contracting, Agricultural-Industry (Agri-Industry) and Investment and Services. 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 Group has 39 companies and 13 subsidiaries. In 2019, the Group had USD 2.458 billion in revenues and assets of USD 2.132 billion. With 17,094 skilled employees and more than 60 years of experience, it is exemplary within the business world in terms of quality standards and ways of doing business.

Tekfen Contracting Group, with extensive experience especially in oil, gas and 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.

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 nearly 400 projects, demonstrating its accumulated expertise. As of end of 2019, Tekfen Construction's active projects portfolio had a contract value of USD 1.715 billion. In Engineering News-Record's 2019 list of the World's 250 biggest international contractors based on their 2018 operations, Tekfen Construction ranked 69th. For the current reporting year, the organizational boundaries of the GHG inventory have been extended to include all of the national and international projects that are being undertaken by Tekfen Construction.

Tekfen Engineering provides engineering design, procurement and project management services for group and non-group projects.

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.

Tekfen Agri-Industry Group is the sector's largest private corporation in terms of business volume, product and service portfolio, and market share. Operating as Toros Agri, it is Turkey's 70th largest industrial company. While principally a producer and marketer of fertilizer, Toros Agri also engages in yield-raising, quality-improving agricultural inputs, seed production, techno-agriculture, and seedling production. Toros Agri holds the highest share of installed production capacity for fertilizer in Turkey. It has 1,201 dealers and authorized sales points

throughout Turkey, enabling it to distribute its products to every corner of the country. Toros Agri has become an important player in organomineral fertilizer market with its new investment, Gonen Energy in 2019.

Embracing a wide range of products and services from fertilizers and plant nutrients to seeds, seedlings, and saplings and fresh produce, the Tekfen Agri-Industry Group is one of Tekfen Holding’s core business activities generating 27.28% and 27.25% shares respectively of total turnover and operational profit.

Toros Agri’s principal business line is the production of fertilizers. In the İstanbul Chamber of Industry’s 2018 list of the five hundred business concerns in Turkey, Toros Agri ranked in 70th place. Together with its subsidiaries and affiliates, the company conducts its operations under three headings: chemical and organic- organomineral fertilizer production and marketing, marine terminal services, and free-zone and fuel-station management. In fertilizers, 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 fertilizer producer.

Tekfen Agri is an agricultural research, production, and marketing company whose operations range from cultivation to the production of fresh fruit and agricultural inputs such as seeds, seedlings, and saplings. With its team of 69 agricultural engineers, Tekfen Agri is one of the most important advocates of science-based farming in Turkey today.

Tekfen Ventures is a venture capital fund that seeks out and takes advantage of opportunities in start-up companies by investing in them during their early stages. Tekfen Ventures’ portfolio companies are pushing the bounds of what’s possible in science, robotics, and technology to improve the agriculture, construction, and manufacturing industries.

Tekfen Services provides operation and management services for a portfolio of properties.

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, 2019	December 31, 2019	No

C0.3

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

- Azerbaijan
- Iraq
- Kazakhstan
- Qatar
- 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

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.

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	<p>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.</p> <p>Board Members are directly informed on climate issues in Tekfen Holding Board Meetings. 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.</p> <p>Therefore, we can say that our Chairman of the Board is the highest responsible person for climate-related issues.</p> <p>In 2019 one of the major decisions led by the Chairman of the Board is the acquisition of majority shares (70%) of Gonen Renewable Energy Production Inc. Gonen produces bio-gas and organic fertilizers and with this acquisition, Toros Agri intends to become a major player in the markets of organic and organomineral fertilizers, a sector whose market potential is expected to increase in response to changing agricultural policies.</p> <p>Gonen Renewable Energy, Inc., was founded in 2011 in order to produce electricity, synthetic fuel, humic acid and organic fertilizer from biogas. 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. Zero liquid discharge, advanced flue gas purification and a heat recovery system combine to ensure that the Gonen facility respects the environment in every possible way. In addition to the economic value generated by the electrical energy and organic fertilizer it produces, the plant eliminates 400 tons of organic waste per day, thus reducing emissions by the equivalent of 62,537 tons of carbon dioxide per year; Gonen Energy, therefore performs a highly effective role in the resolution of the area's environmental pollution issues. The facility currently has an electricity production capacity of 3.62 MW; it also has a production capacity of 15,000 tons of solid organic and 10,000 tons of liquid organic fertilizer per year. When additional investments are completed, it will be able to produce 35,000 tons of organomineral fertilizer annually.</p>
Chief Executive Officer (CEO)	<p>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 had an executive responsibility while managing climate-related issues in Tekfen Holding.</p> <p>CEO also has the executive power for important issues such as defining climate change strategy, management of the risks/opportunities and finalization of targets</p>

	<p>before they are presented to the Board of Directors.</p> <p>In 2019 our CEO has approved our Sustainability Policy, which includes vigorous commitments about our Environmental Performance including our GHG emissions. Our CEO has also approved our Supply Chain Policy, which enlists the expectations of Tekfen from its suppliers, including monitoring of GHG emissions and reducing their carbon footprint.</p>
--	--

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	<ul style="list-style-type: none"> Reviewing and guiding strategy 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 	<p>Board Members are informed regularly on climate-related 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. 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.</p> <p>In September 2017, the Sustainability Committee (SC) was established. The Sustainability Committee is chaired by the acting 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.</p> <p>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. The Corporate Governance Committee 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.</p> <p>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-</p>

		<p>related objectives on behalf of the Board of Directors. Changes in emissions data are also reported to the Board of Directors annually.</p> <p>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. One of these investment decisions was to acquire Gonen Renewable Energy Production Inc. which produces biogas based renewable energy and organic fertilizers from the waste of cattle and chicken farms, agricultural operations, and food factories in the vicinity of the plant.</p> <p>This investment was a major strategic decision in combating climate change.</p>
--	--	---

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
Other committee, please specify Corporate Governance Committee (CGC)	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 Coordinator	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other committee, 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).

Under the Board of Directors lies the Corporate Governance Committee (CGC) which consists of two independent Board Members and Investor Relations Director.

BoD and CGC's climate-related responsibilities include developing strategies and overseeing the management of climate-related risks and opportunities.

Both the BoD and the CGC are informed about the climate related risks, opportunities, scenarios and possible courses of action by the CEO and the acting CFO who is also the Leader of the Sustainability Committee.

The Sustainability Committee (SC) is formed under the Corporate Governance Committee in order to help the Board of Directors oversee and effectively manage climate and sustainability-related issues with a holistic approach. The Committee is led by acting CFO who is also a member of the Executive Board. SC consists of management-level members appointed by top management of Tekfen Holding and the General Managers of Tekfen Group Companies, including Working Group Leaders (Corporate Communications and Sustainability Director, HSE&Q Coordinator, IT Director, Corporate Governance Director and HR Director).

The Tekfen Sustainability Committee is responsible not only for formulating the Tekfen Group's sustainability strategies, road maps, objectives, policies, and reporting criteria including climate-related issues, but also for integrating sustainability efforts in line with Tekfen Holding's priorities and 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. 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 and Facility Management of Tekfen Tourism, Project Coordinator experienced on wastewater and 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 Quality Manager experienced on green building certifications from Tekfen Holding and a Sustainability Manager experienced on the other environmental issues from Toros Agri.

The Sustainability Committee is regularly being notified on sustainability related issues deemed crucial by the Environment Working Group.

Material issues, risks, and opportunities related to climate change are identified and managed by the Environment Working Group. This Group is in charge of analyzing current and future trends on climate change scenarios, carbon emissions accounting while continuously aiming to identify improvement projects. The environmental working group is also responsible for preparing a road-map for short-mid and long term targets.

The outcomes of the Environment Working Group Meetings are reported to the Sustainability Committee. 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 and Investments Vice President and Deputy CFO. Top Management holds regular meetings and current and emerging climate change-related issues including material risks and opportunities together with carbon emissions performance as well as annual emissions reporting outcomes are monitored and analysed by Top Management.

In addition, the Board of Directors is also informed by the Corporate Governance Committee and/or the CEO.

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	<p>In the reporting period, 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, which relates directly to climate change related issues like energy reduction and efficiency projects.</p> <p>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 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.</p>

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	Energy reduction project Efficiency project Behavior change related indicator	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 corporate governance, stakeholder relations, social responsibility, environment, digitalization and

		<p>Environmental criteria included in purchases</p> <p>Supply chain engagement</p>	<p>innovation. There are actions under environment and innovation which relates directly to climate change related issues like energy reduction and efficiency projects.</p> <p>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.</p> <p>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.</p>
Other C-Suite Officer	Monetary reward	<p>Emissions reduction target</p> <p>Energy reduction project</p> <p>Efficiency project</p> <p>Efficiency target</p> <p>Behavior change related indicator</p> <p>Environmental criteria included in purchases</p> <p>Supply chain engagement</p>	<p>Our new performance assessment methodology includes a top to bottom approach. Our C-Suite Officers have targets on energy reduction and efficiency. 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.</p> <p>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.</p>
Corporate executive team	Monetary reward	<p>Emissions reduction project</p> <p>Energy reduction project</p> <p>Efficiency project</p>	<p>Toros Agri is the source of 80% of our scope 1 and 63% 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 an increased salary or a bonus. Moreover, the CEO has a specific target defined as realizing Sustainability Action Plan, which includes the effective planning of emissions reduction initiatives</p>

All employees	Non-monetary reward	Behavior change related indicator	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.
---------------	---------------------	-----------------------------------	---

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 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 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:

1. Financially; if the risk impact is >1% EBITDA (singular impact, which equals to 3,233,900 USD for the reporting period) or >0,5% of EBITDA (continuous impact, which equals to 1,616,950 USD). EBITDA for the reporting period is 323,390,000 USD.
2. Legally; due to legislative or contractual non-conformities medium level loss of business or fines (please see substantive financial impact definition above)
3. Reputational; risk poses medium level effects on our reputation. Some negative effects on clients or employees. Some bad press on local or national media. Situation is critical but can be kept under control.
4. Operationally; 2 to 5 days of disruption in operations, events reducing the performance of employees. For construction projects 2-5% difference in planned and realized progress of projects.
5. Strategically; Some mid-level impact on strategic plans and their execution. Strategies may need to be revised in some areas.

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

The Risk Management Directorate determines the risk model that is going to be utilized in the Corporate Risk Management (CRM) as per ISO 31000 Risk Management Standard. CRM specifically classifies risks as strategic, operational, financial, compliance, and reputational risks.

All value chain stages are included in the risk assessments.

Climate and water risks at the corporate level are considered under strategic, financial, and compliance risks while at an asset level, they are considered under operational, financial, and compliance risks. Activity related environmental impacts at asset levels

are also considered during environmental risk assessment processes under ISO 14001 Environmental Management System. Long-term climate-related risks are assessed up to 2050 based on scenario analysis conducted by the Intergovernmental Panel on Climate Change (IPCC).

Besides Risk Management Directorate, there is also a Risk Committee under the Board of Directors (BoD). Tekfen Holding Risk Management Directorate and Risk Committee manage critical risks and opportunities by considering risk-opportunity levels via a risk portfolio approach.

The first step of risk management is the identification, at which we determine root causes and risk types (financial, operational, reputational, strategic, compliance), and other related risks and the responsible owners. Identification includes risks whether or not their source is under the control of the organization, even though the risk source or cause may not be evident. Risk identification includes an examination of the knock-on effects of particular consequences, including cascade and cumulative effects.

The risk assessment is carried out in the second stage at which the risk's gross impact, gross probability, both with a scale of 1 (very low) to 5 (very high) and 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 and their efficacy reveal the net risk score and the net financial impact. Risk analysis involves consideration of the causes and sources of risk, their positive and negative consequences, and the likelihood that those consequences can occur. Existing controls and their effectiveness are also considered. The risks that are assessed to have a substantive financial and/or strategic impact are addressed first.

The third stage is addressing the risk (reduction, transfer, abstention, and acceptance). Actions and the cost of actions are determined in the fourth stage by root cause analyses and detailed risk reduction methods/improvement of controls. The tracking of these actions makes up the fifth step. The responsible owner tracks and notifies the Risk Manager in due time. All risk management operations including actions and status tracking are done by individual company Risk Managers with the help of HSE Managers for climate-related risks.

During the selection of the most appropriate risk as well as opportunity management option, Tekfen evaluates the costs and efforts of implementation against the benefits derived, with regard to legal, regulatory, and other requirements such as social responsibility and environmental protection. World Economic Forum lists climate-related risks and water security risks among the top 10 risks. Therefore, Tekfen has chosen "reduction" as risk treatment and opportunity generating options for both climate and water-related risks and opportunities.

Management Directorate consolidates all Tekfen Companies' risk inventories and presents them to the Holding Board through Risk Committee. Additionally, Tekfen HSEQ Coordinatorship assesses Tekfen's climate- and water-related risks and opportunities in the Holding Solo Risk Inventory. Risk portfolio including risks with grades more than a certain threshold is reported to the BoD every two months. These risks are monitored and followed upon by the BoD as well. All risk management operations including actions and status tracking are followed by each Company Risk Managers with the help of Company HSE Managers in cases of climate risks.

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 (consumption) is identified as an opportunity and Toros Agri acquired 70% of the biogas and organic fertilizer producer Gonen Renewable Energy Production, Inc. with the aim of becoming a major player in the organic and organomineral fertilizer markets. Raw materials used in the facility are fully supplied from cattle and poultry farms, agricultural businesses, and food factories nearby. The facility is completely environmentally-friendly with its zero liquid waste discharge, advanced flue gas treatment and heat recovery system also plays a very effective role in eliminating environmental pollution in the region through the disposal of 400 tons/day of organic wastes, in addition to the economic value created by the electricity and organic fertilizers produced. The facility is also validated under Gold Standard (Project ID GS1160) to provide around 62,537 tons of CO2e emissions reductions per annum.

Physical risk example:

As part of Tekfen Holding operations, our Agri-industry is among the ones that are likely to be affected by increasing severity and frequency of extreme weather events.

Especially hail storms, heavy rains and floods pose an extreme risk to our Agri Industry operations (mainly fertilizer storage facilities and orchards are under this risk).

This risk can affect the operations of both Toros Agri and Tekfen Agri. After this risk was identified, it was scored on gross probability and impact. The scoring was as follows:

Probability: Medium (3)

Impact: As this risk was assessed to have a financial impact (8.95 M\$) which is over our substantive impact threshold, the impact was scored as "Very High (5)"

The gross risk score is therefore 15 which is high. Details of how this risk is addressed and managed can be found under section 2.3a of this report. (Risk 4)

Transitional risk example:

There are many transitional risks we face especially due to the geography we operate in. Turkey has an active MRV system which will probably include an Emissions Trading Scheme (ETS) in the very near future. Our 3 fertilizer plants fall under this regulation.

After this risk was identified, it was scored on gross probability and impact. The scoring was as follows

Probability: High (5)

Impact: As this risk was assessed to have a financial impact (13.73 M \$) the impact was scored as "Very High (5)"

The gross risk score is therefore 25 which is high. Details of how this risk is addressed and managed can be found under section 2.3a of this report. (Risk 3)

C2.2a

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

	Relevance & inclusion	Please explain
--	-----------------------	----------------

<p>Current regulation</p>	<p>Relevant, always included</p>	<p>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.</p> <p>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 are also taken into consideration at the site-specific Environmental Impact Assessment process.</p>
<p>Emerging regulation</p>	<p>Relevant, always included</p>	<p>Relevance: We closely monitor the emerging climate-related regulations.</p> <p>Example: The emerging Emission Trading System (ETS) and/or potential Carbon Taxation mechanism in Turkey is considered as one of the risks that we are facing. 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. Recently, under the World Bank-funded PMR program, the Turkish Ministry of Environment and Urbanization has organized workshops to simulate the application of an ETS in Turkey. All these active efforts show that there will be ETS and/or carbon taxation mechanisms in Turkey and this will increase our operating costs. 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 th 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.</p>

		Please see Risk 3 under section 2.3a of this report for further details on the assessment of risks related to the emerging regulations.
Technology	Relevant, always included	<p>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.</p> <p>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 80% 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 80% 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. Therefore, any efforts we make not only help us to manage future liabilities effectively but also and more importantly can result in increased revenue as a result of meeting the increasing demand for lower-emission fertilizers. The global warming potential of N2O is much higher than CO2 and therefore, initiatives to reduce N2O emissions contribute to greater climate change mitigation practice. 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. Our Agri-Industry company, Toros Agri, has an R&D Center where a team of employees works on developing new types of fertilizers with low environmental impact. Toros Agri also has developed a free app for farmers that gives fertilizing advice based on weather, soil, and plant data available. This app allows farmers to analyze conditions in their fields and get the most efficient fertilizing advice that will enable the best water and crop efficiency. We closely monitor technological applications used in the industry to reduce our N2O related GHGs. Overall, technology-related risk, as well as opportunities, are assessed as part of strategic risks covering both company and asset levels.</p>
Legal	Relevant, always included	<p>Relevance: Non-compliance with all laws and regulations including climate-related ones causes risk which exposes our Company to litigation. Therefore,</p>

		<p>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 risks under this category identified as substantive to date except the emerging ETS regulation, which is assessed under the risk type “emerging regulation”.</p> <p>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 ETS regulation, no other legal risks are assessed to have substantive financial or strategic impacts, so no legal risks are reported under section 2.3a.</p>
Market	Relevant, always included	<p>Relevance: Sectoral as well as market risks are closely monitored on a Group Company basis. Our two main business areas; Contracting and Agri-Industry are among the sectors which are likely to experience climate change impacts the most.</p> <p>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 72,2% 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.</p>
Reputation	Relevant, always included	<p>Relevance: Our brand image and reputation are very important both locally and internationally. Therefore, as part of our multidisciplinary corporate-wide risk assessment reputational risks are one of the five main topics evaluated.</p> <p>Example:</p>

		<p>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 80% of our Gross Global Scope 1 GHG emissions due to N2O emissions) may therefore be subjected to increased stakeholder pressure due to its main operation and therefore be subjected to reputational loss. These pressures and reputational loss would result in decreased demand for N2O related fertilizers, namely Calcium Ammonium Nitrate (CAN) and Ammonium Nitrate (AN).</p> <p>Please see Risk 2 under section 2.3a of this report, for more detailed information on how this risk is assessed and managed.</p> <p>Our main operations include oil and gas contracting and high N2O emitting fertilizer production and are specifically considered in the context of our reputation.</p> <p>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.</p> <p>While managing this risk in our 2 main business areas; for the oil and gas industry, we acknowledge the climate change scenarios and their likely impact on the industry as the GHG emissions need to be limited, therefore in the reporting period, we 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 Agri-Industry, 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.</p>
Acute physical	Relevant, sometimes included	<p>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.</p> <p>Example: As part of Tekfen Holding operations, our Agri-industry is 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 Agri-Industry. (1) As both our Toros Agri and Tekfen Agri companies have operations and warehouses where our products are stored. Acute and severe</p>

		<p>physical events can damage our products, causing revenue loss together with likely damage to our assets;</p> <p>(2) Tekfen Agri as a stone fruit producer (such as apricot and cherry) which are vulnerable to extreme weather conditions. Therefore, if the severity of extreme weather events such as hail, cyclone, increase, we may then face a risk of reduced output as our product will be adversely affected both quality and quantity-wise, leading to revenue loss. You can find more detailed information on this risk under section 2.3a, Risk4.</p> <p>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.</p> <p>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.</p>
Chronic physical	Relevant, always included	<p>Relevance:</p> <p>Chronic physical risks, especially water stress due to climate change is a very important risk for us as it can adversely affect our agricultural activities;</p> <p>(a) can reduce the demand for Toros Agri's fertilizers and</p> <p>(b) can reduce our yield in Tekfen Agri Group Company operations who has its own orchards as well as suppliers who produce high-quality stone fruit.</p> <p>Example:</p> <p>Chronic changes in precipitation and extreme weather event patterns do have the potential to impact various aspects of our operations. The most substantive financial impact, however, will be on our Tekfen Agri agricultural production operations. Among stone fruits, Tekfen Agri produces various products that are vulnerable to changing climate patterns and chronic extreme weather events. Evaluating scientific climate change and water scenario analysis conducted by internationally well- respected organizations such as IPCC, there is a clear indication that chronic and extreme weather events will get more frequent in the medium to long term. If these extreme climate patterns are to get to a certain point, it will affect our products directly, resulting</p>

		<p>in decreased output related to revenue loss. In order to prevent this, we are more likely to invest in countermeasures 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.</p> <p>For further information on how this risk is assessed and manage, please see Risk 5 under section 2.3a of this report.</p> <p>We are considering the acute and 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 WBCSD Global Water 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.</p>
--	--	---

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

Tekfen Contracting Group undertakes projects mainly in the oil and gas industry. However, 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 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 72,2% of Tekfen Holding's revenues come from Tekfen Contracting Group.

Time horizon

Medium-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)

88,700,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Approximately half of the Contracting Group's business volume is in the oil and gas industry. For the reporting period, this reflects about 887 million revenue from oil and gas projects. According to the DNV GL Energy Transition Outlook 2018 Report, fossil energy projects' CAPEX will decrease by about 30% by 2030.

Therefore, we assume a 10% reduction in business volume due to a shift in energy preference means USD 88.7 million revenue would be lost at our Contracting Group. The financial impact figure is different from the previous year due to a reduction in business volume in the reporting period.

Cost of response to risk

787,500

Description of response and explanation of cost calculation

In line with global trends, the oil and gas industry is expected to contract in the long term. In order to reduce the impact this risk pose on our turnovers, Tekfen Construction is actively preparing to enter the renewable energy contracting sector. Our renewable energy department with relevant specializations is seeking opportunities in the sector to diversify our services to prevent the probable turnover loss likely to be caused by the downsizing of oil and gas projects.

The cost of management related to this activity includes the employment of new specialist personnel, memberships, business development activities, and outsourced services for proposal (USD 412,500).

Moreover, Tekfen Construction is now getting more oil and gas infrastructure improvement projects to enhance the performance of existing oil and gas refineries, contributing to directly optimizing their GHG emissions. The cost of management includes the employment of new specialist personnel, memberships, business development activities, and outsourced services for proposal, which costs approximately USD 375,000 annually.

Therefore, the total cost of response equals 787,500 USD.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Reputation

Stigmatization of sector

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

Fertilizer production is a GHG emissions-intensive sector. In particular, nitric acid production is causing N₂O emissions which has much higher global warming potential than CO₂.

In Turkey, there are 4 nitric acid production plants and one of them is Toros Agri's Mersin Plant. In 2018, Nitric Acid Climate Action Group (NACAG) has invited these 4 nitric acid producers to a meeting. The objective of NACAG is to incentivize the installation of an effective N₂O abatement technology in every nitric acid plant worldwide. At this meeting, NACAG offered us technical assistance for N₂O related emission reductions. This example indicates that international pressures will increase at nitric acid plants.

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 80% of our Gross Global Scope 1 GHG emissions due to N₂O emissions) may therefore be subjected to increased stakeholder pressure due to its main operation and therefore be subjected to reputational loss. These pressures and reputational loss would result in decreased demand for N₂O related fertilizers, namely Calcium Ammonium Nitrate (CAN) and Ammonium Nitrate (AN).

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

17,800,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

We calculate this impact by considering a 10% loss from our sales revenues in our Agri-Industry business line as a result of decreased sales of N2O intensive products, namely Calcium Ammonium Nitrate (CAN) and Ammonium Nitrate (AN) fertilizers.

Tekfen Agri sales revenue covering the sale of CAN and AN was USD 178.18 million in 2019. A 10% decrease in sales revenue will result in a decrease in turnover of USD 17.8 million according to 2019 figures.

Cost of response to risk

630,000

Description of response and explanation of cost calculation

There are technologies that offer over 85% reduction of N2O emissions at Nitric Acid Plants. With technical consultancy provided by the Nitric Acid Climate Action Group's we have completed the feasibility study and selected the most appropriate technology to invest in. The catalyzer installation steps have been determined and the governmental incentive options are being researched.

The cost of management (USD 630,000) covers the cost of installing a new catalyzer system to reduce N2O emissions.

The planned investment was put in the budget and the budget was approved by Toros Agri Board of Directors. This investment will probably be finalized in 2021.

Comment

Identifier

Risk 3

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

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 or Carbon Tax.

Toros Agri has 3 fertilizer plants in Samsun, Mersin, and Ceyhan, which are already under the scope of Turkish MRV regulation. Turkey is in process of establishing a carbon pricing mechanism either via an emissions trading system or through a carbon tax. The background for this regulation is already present (The Turkish Regulation on Monitoring, Reporting and Verifying of Greenhouse Gas Emissions- 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 or a carbon taxation mechanism.

On the other hand, Partnership for Market Readiness (PMR) Turkey Program, launched by the World Bank in 2011, is a technical assistance program aiming at supporting developing countries which have significant importance in the global fight against climate change in their efforts to reduce greenhouse gas emission, through effective use of market-based instruments (MBIs). In Turkey, the PMR provides support to pilot MRV in several sectors. It also supports capacity building on carbon pricing instruments and lays out design options and a road map toward the implementation of an appropriate carbon pricing mechanism. Recently an ETS simulation study was also performed under the PMR project.

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

Time horizon

Medium-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)

13,727,228.8

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The potential financial impact figure was estimated based on the 2019 average EU ETS allowance price for the primary markets published by EEX on “EEX EUA Primary Auction Spot Report-2019” (€ 24.58 per t CO₂ which equals to 27.53 USD).

In 2019 the verified total N₂O and CO₂ emissions of the 3 plants owned by Toros Agri were equal to 831,046.00 tons of CO₂e.

In a recent 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% (831,046 x 0,60= 498,628 tons CO₂e).

The potential financial impact is therefore calculated by multiplying the 60% of our current GHG emissions by the unit price per ton of CO₂e (498,628 tCO₂e x 27.53 USD/tCO₂e= 13,727,288.8 USD).

Moreover, the potential financial impact is likely to be higher because energy producers will also be included in this regulation and the energy prices will also rise considerably as they will also be paying for allowances.

Cost of response to risk

630,000

Description of response and explanation of cost calculation

There are technologies that offer around 85% 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 which have been allocated following the approval of Toros Agri Board of Directors. The cost of the N₂O catalyzer system is USD 630,000.

Comment

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

As the world grapples with the climate change phenomenon, Turkey is already dealing with its consequences, and extreme weather cases are on the rise in Turkey. We have already started experiencing more frequent and extreme weather events.

Climate-related acute physical events such as floods or hurricanes as well as droughts do affect both assets and supply chain in general.

As part of Tekfen Holding operations, our Agri-industry is 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 Agri-Industry.

(1) Toros Agri has warehouses where the fertilizers are stored. Acute and severe physical events can damage the warehouses and the stored products, causing revenue loss together with likely damage to our assets. The total capacity of Toros Tarım warehouses is 179,689 tons. The average sale price of fertilizers in 2019 is 302 USD/ton. Considering that the warehouses are completely full, the total value of stored fertilizers is 54.3 million USD.

(2) Tekfen Agri as a stone fruit producer is vulnerable to extreme weather conditions. Therefore if the severity of extreme weather events (e.g. hail, cyclone) increases we may then face a risk of reduced output as the product will be adversely affected both quality and quantity-wise, leading to revenue loss. Tekfen Agri's total turnover is 34.8 million USD.

In 2019 the projected crop yield of the orchards was 3,200 tons, but due to extreme weather events like hail storms and heavy rains, the crop yield dropped to 1,650 tons which resulted in a monetary loss of about 1.18 million USD. If we didn't install the hail nets on our orchards, this loss would be higher.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

4,455,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The stated potential financial impact figure represents an assumption of a 5% loss in revenue gained from Tekfen Agri and Toros Agri's sold warehouse products, due to physical damage and loss of products caused by sudden floods or hurricanes. Considering that Toros Agri's warehouses are completely full, the total value of stored fertilizers is 54.3 million USD. In addition, Tekfen Agri's total revenue is 34.8 million US and the total revenue gained from the sales of these products in the reporting period was USD 89.1 million (54.3+ 34.8)

While calculating the potential financial impact, we have taken 5% of the total revenue gained from the sales of these products in the reporting period. Please note that revenue gained from sales of fertilizers was estimated based on the maximum stock capacity experienced in 2019. In the reporting period, 5% of the total revenue equals to USD 4,455,000. (USD 89.1 million x %5)

Cost of response to risk

700,000

Description of response and explanation of cost calculation

In order to manage this risk and avoid potential financial impacts, our maintenance teams in all our facilities work constantly to keep the assets in full functioning and protected order. Roof insulation or facade conditions are routinely checked and any probable damage or malfunction of building services equipment is promptly taken care of. In the reporting period, the cost for these measures was USD 310,000. Moreover, as part of our Tekfen Agri orchard operations, we have installed a hail net over 330 decares of land where we produced 550 tonnes of apricot in the reporting period. The installation CAPEX for hail nets was USD 390,000. Our response to prevent this risk is on the asset level.

Therefore total cost of response is USD 700,000 (310,000 + 390,000)

Comment

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical
Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

As the world grapples with the climate change phenomenon, Turkey is already dealing with its consequences, and extreme weather cases are on the rise in Turkey. We have

already started experiencing more frequent and extreme weather events.

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.

Chronic changes in precipitation and extreme weather event patterns do have the potential to impact various aspects of our operations. The most substantive financial impact, however, will be on our Tekfen Agri agricultural production operations. Among stone fruits, Tekfen Agri produced various products that are vulnerable to changing climate patterns and chronic extreme weather events. Evaluating scientific climate change and water scenario analysis conducted by internationally well- respected organizations such as IPCC, there is a clear indication that chronic and extreme weather events will get more frequent in the medium to long term. If these extreme climate patterns 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 chronic physical impacts, we are more likely to invest in countermeasures 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.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

3,468,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The potential financial impact figure given is calculated with the assumption that 10% of Tekfen Agri's revenue will be affected adversely from climate-related chronic physical events.

Tekfen Agri realized a turnover of USD 34.68 million in the reporting period and

therefore the estimated potential financial impact was calculated as 10% of this sum which is USD 3,468,000.

Cost of response to risk

1,656,097

Description of response and explanation of cost calculation

To manage these impacts, at the business level, Toros Agri and Tekfen Agri are supporting research and development of fertilizers and crops resistant to climatic conditions. At the asset level, Tekfen Agri has started to implement an efficient smart irrigation system supported by humidity sensors and meteorological stations.

Cost of management realized during the reporting period covers the following actions;

(a) The investment made by Toros Agri on a Research and Development Center to develop innovative products that require less water and avoids water pollution. Special fertilizers, developed as a result of these R&D projects are completely water-soluble and are being used in conjunction with modern irrigation techniques such as drip and rain irrigation. 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 712,097) in the reporting period.

(b) In order to support the resilience of the sector, Tekfen Agri is participating in PRIMA (Partnership for Research and Innovation in the Mediterranean Area) GENDIBAR Project, aiming to ensure sustainable agricultural practices in barley production. The cost of a response is USD 165,000.

(c) In the reporting period, Tekfen Agri invested in 9 Metos Meteorological Stations. The first phase was completed in all of the orchards and we have also invested in transmitters and additional units in two of our orchards. The total investment made in 2019 was 52,200 Euros (Around 59,000 USD) In 2019 We also tried a new system called Manna for smart irrigation, where we can monitor the plantations via satellites and the system would suggest how much water is needed, when to irrigate, etc. We made a pilot application on 250 decares, but the results were not satisfactory, so we didn't extend this application. Instead, we started using the Satellite Monitoring Systems of Doctar. The investment made in 2019 for Doctar system was around 5,000 USD. Therefore total cost of response is USD 1,656,097 (715,000+ 712,097+ 165,000+ 59,000+ 5,000)

Comment

Identifier

Risk 6

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Mandates on and regulation of existing products and services

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

One of the targets of EU is to become climate-neutral by 2050, within the scope of this ambitious target, EU has announced The European Green Deal which provides a roadmap with actions to;

- boost the efficient use of resources by moving to a clean, circular economy
- restore biodiversity and cut pollution

EU has also proposed a European Climate Law turning the political commitment into a legal obligation and a trigger for investment.

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. This will reduce the use of inorganic fertilizers by at least 20% by 2030.

As 9.6 % of Toros Agri's sales are to the European market. The emerging regulations may result in a loss of 20% of our European Sales volume by 2030.

Time horizon

Medium-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)

9,220,082

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The potential financial impact figure given is calculated with the assumption that 20% of Toros Agri's European sales revenue will be affected adversely from the EU Green Deal.

Toros Agri's 2019 sales revenue from European operations was USD 46,100,414. 20% of this figure is the potential financial impact figure.

Therefore estimated potential financial impact of EU Green Deal is USD 9,220,082 (46,100,414 x 0,20)

Cost of response to risk

1,427,097

Description of response 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 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 Organomix (worm castings), CalMag, two new entries with new ingredients in the water-soluble NPK market (Nutriactive and Greenfeed) and FloraTech (lawn fertilizer). In the reporting year, sales of these specialty fertilizers went up by 42.8% with respect to 2018.

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 712,097) in the reporting period. Therefore total cost of response to this risk is USD 1,427,097 (715,000 + 712,097)

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

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

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Soils can store up to 50-300 tonnes of carbon per hectare, which is equivalent to 180-1100 tonnes of carbon dioxide (CO₂), and some 89% of agriculture's future mitigation potential is based on soil carbon sequestration (IPCC, 2007). Carbon sequestration in cultivated soil can be increased by reducing tillage, adding organic amendments, using cover crops, and adding appropriate mineral nutrients for biomass production. Increased soil organic matter improves soil health and productivity resulting in more CO₂ capture from the atmosphere.

Toros Agri implements nutrient stewardship programs and Fertilizer Best Management Practices (FBMPs) in order to encourage farmers to use fertilizers in an effective and efficient way.

Fertilizers, when used following site and crop-specific Best Management Practices in the 4 areas of nutrient management (source, rate, time, and place) are important for adaptation to and mitigation against climate change.

Sustainable intensification of agricultural productivity on arable land not only promotes global food security but also reduces deforestation and loss of peatlands, wetlands, grassland, which, combined make up some 5 Gt CO₂-eq annually or 10% of global GHG emissions (AR5, chapt. 11).

The correct application of plant nutrients plays an important role in sustainable agricultural intensification, and thus can ease pressure on the world's forests and peatlands.

As a result of correct fertilizer use, the positive effects like food security and efficiency will become clearer to the end-users. This will result in a demand for fertilizers that are suitable for the soil and type of agricultural product which will, in turn, increase the efficiency. In addition, the positive effect of the correct fertilizer use on reducing the nitrate pollution in groundwater and carbon sequestration will diminish the prejudiced opinions on fertilizer use which will, in turn, result in an increase in demand for our existing products and services.

Raising awareness about the correct use of fertilizers and ongoing R&D activities related to the development of nutrient-rich fertilizers presents an opportunity to increase our revenues due to increased demands for our products and services.

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)

30,562,000

Potential financial impact figure – maximum (currency)

61,125,800

Explanation of financial impact figure

The stated potential financial impact as a result of defined opportunity is assumed as a minimum %5 and a maximum 10% increase in our Agri-Industry revenue due to increasing demand for the fertilizers.

In 2019, Tekfen Holding's Agri-Industry generated a USD 611,258,000 revenue.

Therefore, the assumed potential financial impact figure is calculated to be between 30,562,000 USD and 61,125,800 USD.

Cost to realize opportunity

228,591

Strategy to realize opportunity and explanation of cost calculation

To increase awareness on the correct application of fertilizers we are using several methods that include:

- Toros Farmer App
- One-on-one meetings with the Toros Agri Distributors and authorized dealers
- Presentations / Meetings / Joining Agricultural Expo's
- Giving training to farmers

"Toros Farmer App" agricultural decision support application, a simple and easy-to-use app, aims to help farmers increase their productivity by using their limited resources in the most correct manner. The application that farmers can download for free on their smartphones, computers, and tablets provides specific fertilization suggestions to farmers based on the coordinates of the field and instantaneous weather, soil, and plant conditions, thus aiming to increase savings and productivity. Farmers that upload their information to the system receive advance warnings for frost, storm and excessive rain risks for their own fields, while also obtaining important agricultural information concerning rainfall and temperature/heat accumulation. By the end of 2019, 10,724 plantations belonging to 9,762 farmers were included in the Toros Farmer database. When the number of distributors (1,264) and authorized dealers are taken into consideration a total of 11,026 members actively use this App.

In 2019 we have performed 3,651 visits to our distributors, 4,996 visits to the farmers, 269 meetings with agricultural companies, and 39 marketing activities (meetings, presentations, expos). We have also performed 156 educational activities with our

Toros Farmer Education Bus and 15 Drone Flights.

The total cost to realize this opportunity includes the cost of Toros Farmer App (6,172 USD) and the cost of meetings, training, joining expos (222,419 USD).

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Participation in carbon market

Primary potential financial impact

Returns on investment in low-emission technology

Company-specific description

As identified in Risk 3 under 2.3a of this report, 3 fertilizer plants of Toros Agri are regulated under Turkish MRV regulation. Turkey is in the process of establishing a carbon pricing mechanism, under which we will probably have a cap on our N2O emissions. If we invest in a catalyzer technology that will reduce our N2O emissions by 85%, we may have an opportunity to remain well-below our emission cap, which will present an opportunity to sell our emission allowances.

Time horizon

Medium-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)

5,223,194

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The potential financial impact figure was estimated based on the 2019 average EU ETS allowance price for the primary markets published by EEX on “EEX EUA Primary Auction Spot Report-2019” (€ 24.58 per t CO₂ which equals to 27.53 USD).

In 2019 the verified total Scope 1 GHG emissions under the Turkish MRV was equal to 831,046.00 tons of CO₂e in 3 fertilizer plants. 809,829.39 tons of CO₂e of which comes directly from N₂O emissions in Mersin Plant. Therefore we can say that in 3 fertilizer plants 809,829.39 tCO₂e comes from N₂O emissions and 21,216.61 tCO₂e comes from the other Scope 1 emissions.

Assuming our GHG emissions are capped at 80%, then we would have an emission limit of 664,836.80 tons CO₂e (831,046 x 0,80).

50% of capped limit (664,836.80 tCO₂e x 0,50 = 332,418.40 tCO₂e) would probably be allocated free of charge according to a recent ETS simulation study performed under the PMR project. That means we will have a capped limit of 332,418.40 tCO₂e.

If we are able to reduce these N₂O emissions 85% from the 2019 levels, our emissions will be 121,474 tons CO₂e (809,829- 809,829x0,85). With the other Scope 1 emissions, total Scope 1 GHG emissions in our fertilizer plants will be 142,691 tCO₂e (121,474 tCO₂e + 21,217 tCO₂e) . On the other hand, while we are entitled to the 332,418 tCO₂e emission limit, our emission will remain lower. Therefore we will have a chance to sell our emission allowances.

We have an opportunity to sell a total of 189,727.38 [332,418.40 – 142,691.02] tons of allowances once the ETS starts.

The potential financial impact calculated is USD 5,223,194.82 (27.53 USD/tCO₂e x 189,727.38 tCO₂e)

Cost to realize opportunity

630,000

Strategy to realize opportunity and explanation of cost calculation

There are technologies that offer over 85% reduction of N₂O emissions at Nitric Acid Plants. With technical consultancy provided by the Nitric Acid Climate Action Group's we have completed the feasibility study and selected the most appropriate technology to invest in. The catalyzer installation steps have been determined and the governmental incentive options are being researched.

The cost of management (USD 630,000) covers the cost of installing a new catalyzer system to reduce N₂O emissions. The planned investment was put in the budget and the budget was approved by Toros Agri Board of Directors. This investment will probably be finalized in 2021.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

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

Our Agri-Industry is prone to multiple climate-related opportunities.

As the agricultural sector is recognized as one of the most affected sectors from climate change impacts, this creates both risks and opportunities for agricultural products and service providers. Companies investing in R&D to develop new solutions/products that serve the overall aim to curb global warming and mitigate the adverse impacts of climate change, this creates a chance to capitalize on increased revenue to be gained through sales of new/efficient products.

Toros Agri, our fertilizer producing Company, develops and commercializes new products/solutions with enhanced performance aiming resource preservation. Toros Agri can benefit from this opportunity by developing products with multiple benefits such as; applicability through an existing irrigation system, avoiding unnecessary consumption of fertilizers and preventing energy consumption arising from the conventional application of fertilizers to the soil via motor vehicles.

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)

30,562,000

Potential financial impact figure – maximum (currency)

61,125,800

Explanation of financial impact figure

The stated potential financial impact as a result of defined opportunity is assumed as a minimum 5% and a maximum 10% increase in our Agri-Industry revenue due to the increasing demand for lower emissions fertilizers.

In 2019, Tekfen Holding's Agri-Industry generated a USD 611,258,000 revenue.

Therefore, the assumed potential financial impact figure is calculated to be between 30,562,000 USD and 61,125,800 USD (5%- 10% increase in revenue).

Cost to realize opportunity

1,427,092

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 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 Organomix (worm castings), CalMag, two new entries with new ingredients in the water-soluble NPK market (Nutriactive and Greenfeed) and FloraTech (lawn fertilizer). In the reporting year, sales of these specialty fertilizers went up by 42.8% with respect to 2018.

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 712,097) in the reporting period.

Comment

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Fertilizer production is a GHG emissions-intensive sector. In particular, nitric acid production is causing N₂O emissions which has much higher global warming potential than CO₂.

In Turkey, there are 4 nitric acid production plants and one of them is Toros Agri's Mersin Plant. Nitric Acid Climate Action Group (NACAG), which is an international initiative, has invited these 4 nitric acid producers to a meeting. The goal of NACAG is to incentivize the installation of effective N₂O abatement technology in every nitric acid plant worldwide. This example indicates that international pressures will increase at nitric acid plants, as well as local NGOs and the other stakeholders.

Toros Agri's Mersin Fertilizer Production Plant (the only facility with N₂O emissions) may, therefore, be subjected to increased stakeholder pressure due to its main operation and therefore be subjected to reputational loss. These pressures and reputational loss would result in decreased demand for N₂O emitting fertilizers, namely Calcium Ammonium Nitrate (CAN) and Ammonium Nitrate (AN).

Among the Group Companies, Toros Agri's production of N₂O emissions-intensive fertilizers constitute 80% 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.

Therefore, any efforts we make not only help us to manage future liabilities effectively but also and more importantly can result in increased revenue as a result of meeting the increasing demand for lower-emission fertilizers. The global warming potential of N₂O is much higher than CO₂ and therefore, initiatives to reduce N₂O emissions contribute to greater climate change mitigation practice.

Time horizon

Medium-term

Likelihood

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)

30,562,000

Potential financial impact figure – maximum (currency)

61,125,800

Explanation of financial impact figure

The stated potential financial impact as a result of defined opportunity is assumed as a minimum %5 and a maximum 10% increase in our Agri-Industry revenue due to the increasing demand for lower emissions fertilizers.

In 2019, Tekfen Holding’s Agri-Industry generated a USD 611,258,000 revenue.

Therefore, the assumed potential financial impact figure is calculated to be between 30,562,000 USD and 61,125,800 USD.

Cost to realize opportunity

630,000

Strategy to realize opportunity and explanation of cost calculation

Based on the description of opportunity with regards to developing products with lower emissions, we prioritize our efforts to minimize our N2O emissions resulting from fertilizer production.

In the reporting period, a big step towards this direction has taken and an investment amounting USD 630,000 was approved by Toros Agri Board of Directors to install a new catalyzer system at our Toros Agri - Mersin Fertilizer Production Plant.

This investment will result in an approximately 85% reduction in our N2O emissions and will have a significant role in providing lower emissions fertilizers to the market.

Comment

C3. Business Strategy

C3.1

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

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative

C3.1b

(C3.1b) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
RCP 4.5	Summary of the results: 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.

How the results have informed our business strategy?

We consider these impacts especially important in our Agri-Industry 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 and more efficiently. This is why we are investing heavily in special fertilizer products that can be used with modern efficient irrigation methods to avoid access 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.

Case study of how the results directly influenced our business strategy:

Tekfen Agri is buying new orchards and Tekfen Holding asks Tekfen Agri's top management to assess climate change and water stress in the region by using WRI Aqueduct Water Risk Atlas. In addition, during Mergers &Acquisitions works climate change related risks and opportunities are also considered. To raise the awareness at all levels, we have started to provide training on climate change and water management to our Agri-Industry white-collar employees.

As an overall investigation, we are aware that we need to reduce our GHG emissions and optimize/minimize our water consumption according to climate-related scenarios and planning to do a quantitative analysis in the mid-term.

Until then, we make efforts to reduce our N2O emissions (constituting around 80% of our gross Scope 1 emissions) via an investment approved to install a new catalyzer system enabling up to 85% reduction in N2O emissions.

In 2019 one of the major strategic decisions influenced by the results of the

	<p>scenario analysis was the acquisition of majority shares (70%) of Gonen Renewable Energy Production Inc. Gonen produces biogas and organic fertilizers and with this acquisition, Toros Agri intends to become a major player in the markets of organic and organomineral fertilizers, a sector whose market potential is expected to increase in response to changing agricultural policies. However, we are also aware of more ambitious climate-related scenarios being increasingly supported (RCP 2.6) and in the mid-term, we aim to incorporate these findings both qualitatively a quantitatively on our business strategy and action plan.</p>
<p>Nationally determined contributions (NDCs)</p>	<p>Summary of the results: We are also considering Turkey’s INDC in our direct operations as well. This scenario states Turkey’s intended commitment to reduce the business as usual emissions by up to 21% by 2030. As a developing economy, Turkey has plans to grow, and as part of a growing economy, Tekfen’s aims are achieving sustainable growth in parallel with national plans. There are 7 main categories under which Turkey establishes its commitment; Energy, Industry, Transport, Buildings and Urban Transformation, Agriculture, Waste, and Forestry. 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. The time-horizons applied are in line with our organizational applications, but for NDC’s we mainly consider short to medium term, as Turkey’s NDC commits to reducing GHG emissions by 2030.</p> <p>How the results have informed our business strategy? As Tekfen, we aim to make a thriving contribution to our national targets and therefore have prioritized/realized the following actions in line with Turkey’s plans and policies to be implemented as part of its INDC.</p> <p>Case study of how the results directly influenced our business strategy: Tekfen has implemented the following projects in the 7 main categories listed in the INDC of Turkey:</p> <ol style="list-style-type: none"> 1. Energy – entering the renewable energy sector as part of our Contracting Group, a recent acquisition of Gonen Energy which produces renewable energy; 2. Industry – made the investment decision to install a new catalyzer at Toros Agri Mersin Plant to achieve up to 70% reduction in gross Scope 1 & 2 emissions; 3. Buildings and Urban Transformation – Tekfen Real Estate commits to construct buildings with Green Building certification (LEED) such as HEP Istanbul Project, the new archive building of Tekfen Construction targets LEED Platinum certificate ; 4. Agriculture – R&D to continuously develop special fertilizers with less environmental impact while extensive training opportunities for farmers to adopt

	<p>sustainable agriculture practices</p> <p>5. The waste – recent acquisition of Gonen Energy; Turkey's largest integrated biogas and organic fertilizer production plant which operates with zero liquid waste goal, produce renewable electricity as well as organic fertilizer.</p> <p>6. Forest – our recent acquisition, Alanar Fruit with its orchards, helps us increase the carbon sink areas as well.</p> <p>The aim to pursue the consistency between our strategic decisions and the National priorities via frequently checking Policies and Plans introduced (or discussed) and inform Tekfen top management accordingly to take necessary actions. HSE&Q Coordinatorship undertakes the review of climate-related national policies together with the Sustainability Committee and reports to the CEO.</p>
--	--

C3.1d

(C3.1d) 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	<p>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 Agri-industry operations are extremely water dependent on all stages of our value chain, this issue is both a risk and an opportunity for our operations.</p> <p>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.</p> <p>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. For example, the specialty fertilizer product portfolio was enriched by the addition of Toros Organomix (worm</p>

		<p>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.</p> <p>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 2019, with an increase in sales by 42.8% in comparison to 2018 and reaching a total of 41,100 tons equivalent to an increase in revenue by USD 3.6 million. We consider the magnitude of this impact to be high, however, the impact may become much more material over the medium to long term if the demand for these products increases.</p>
<p>Supply chain and/or value chain</p>	<p>Yes</p>	<p>According to our climate-related scenario analysis, water scarcity and extreme weather events are some of the main risks for our Agri-Industry operations in the medium-long term (1-30 years). The projected 10% water stress level increase in Turkey between 2020 and 2030 can be given as one of the main risks. For climate change-related disruptions in our supply and/or value chain, we consider a generous 10% reduction in our revenues.</p> <p>The adverse effects of climate change can prevent farmers, our most important customers, from continuing their business, which can cause serious decreases in fertilizer sales.</p> <p>Therefore, the use of correct, timely, and sufficient amounts of fertilizers is vital for the profitability of farmers and the productivity of their products.</p> <p>An example of a strategic decision is training the farmers on how to use fertilizers in the correct way, raising awareness on this issue, and working on extending the use of Toros Farmer App. Awareness 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</p>

		<p>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.</p>
<p>Investment in R&D</p>	<p>Yes</p>	<p>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 Agri-Industry Group. Being prepared for future impacts is important to us. Therefore, we believe that companies that develop products resistant to new conditions in both fertilizer and seed activities will be ahead of their competitors. In order to turn the risks into opportunities, Tekfen gives utmost importance to R&D activities. Especially in our Agri Industry Group, both Toros Agri and Tekfen Agri has invested R&D centers.</p> <p>As an example of a strategic decision as a result of the risk and opportunities, our Agri-Industry company Toros Agri has established a new R&D facility in Mersin. The facility's aim is to increase our ability to develop new and more efficient products while being the first plant fertilizer 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 (5 to 30 years). 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 investment in R&D 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 between 30 to 60 million USD.</p> <p>Apart from the Agri-Industry, another group company Tekfen Engineering performs R&D activities on Carbon Capture and Storage and Hi-Flex (High Storage Density Solar Power Plant for FLEXible Energy Systems).</p> <p>Tekfen Ventures which is a company that supports Entrepreneurship invests in startups that focus on projects</p>

		that may have beneficial results on Climate Change/Water Security. An example of such a strategic investment is Pivotbio (www.pivotbio.com). Pivotbio works on improving microbial genetics for agriculture, which has the potential to one day replace the need for synthetic nitrogen fertilizer for cereal crops.
Operations	Yes	<p>For our operations, our strategy is influenced by climate-related risks and opportunities which are considered in the short, medium, and long terms (0 to 30 years).</p> <p>Some examples of major strategic decisions that were influenced by climate-related risks and opportunities are:</p> <ul style="list-style-type: none"> • 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. • As a mitigation activity, we are working intensely in reducing our N2O emissions which make up approximately 80% of our Gross Global Scope 1 GHG emissions. This strategic decision is influenced by Risk 2 and Risk 3, details of which are 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 85%. The cost of installation of this system is calculated to be around 630,000 USD, whereas the potential financial impact of these two risks combined is above 31.5 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 and 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, and humidity sensors in the orchards of Tekfen Agri.

C3.1e

(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.

Financial planning elements that have been influenced	Description of influence
---	--------------------------

<p>Row 1</p>	<p>Revenues Direct costs Indirect costs Capital expenditures Capital allocation Acquisitions and divestments Assets</p>	<p>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 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 2019, with an increase in sales by 42.8% in comparison to 2018 and reaching a total of 41,000 tons equivalent to an increase in revenue by USD 3.6 million. We consider the magnitude of this impact to be high. 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.</p> <p>Direct Costs: Climate-related water impacts increase the cost of freshwater and impact our production costs. Water prices in Turkey are around 2.0 - 2.5 USD/m3 for commercial buildings. Any increase in water prices will impact our bottom line as such. In the long term (5-30 years) we are expecting water prices to rise due to water scarcity.</p> <p>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 of 13.73 Million USD. The potential impact figure is calculated using the EU-ETS allowance price and annual GHG emissions in our MRV regulated Agri-Industry operations.</p> <p>Capital Expenditures: Climate change related risks and opportunities are directly factored into our financial planning process for capital expenditures.</p>
------------------	---	---

	<p>As part of our highest efforts to continuously work on developing new and more environmentally friendly products, we have invested in a new 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.</p> <p>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).</p> <p>Capital Allocation:</p> <p>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.</p> <p>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 of about USD 630,000 already approved by our Board of Directors.</p> <p>This catalyzer system investment is also seen as an opportunity, as we may be able to sell our allowances.</p> <p>We may experience high financial impacts in the medium to long term (1-30 years).</p> <p>Acquisitions and Divestments:</p> <p>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. All the raw materials used in the plant are obtained from cattle and chicken farms, agricultural operations, and food factories in the immediate area. Zero liquid discharge, advanced flue gas purification, and a heat recovery system is combined to ensure that the Gonen Energy facility respects the environment in every possible way. In addition to the economic value generated by the electricity generation and organic fertilizer it produces, the plant eliminates 400 tons of organic waste per day, thus reducing GHG emissions around 62,537 tons of carbon dioxide per year. Gonen Energy, therefore, performs a highly effective role in the resolution of the area's environmental pollution issues.</p> <p>Overall, we consider the magnitude of this impact to be medium to long term (1-30 years).</p>
--	--

		<p>Assets:</p> <p>In 2019 heat waves, hail storms and heavy rainfall has resulted in a loss of expected yield in our orchards. This resulted in a loss of more than 1 million USD in revenues. Tekfen Agri as a stone fruit producer (such as apricot and cherry) which are vulnerable to extreme weather conditions. Therefore, if the severity of extreme weather events such as hail, cyclone, increase, we may then face a risk of reduced output as our product will be adversely affected both quality and quantity-wise, leading to revenue loss. In 2019 the projected crop yield of the orchards was 3,200 tons, but due to extreme weather events like hail storms and heavy rains, the crop yield dropped to 1,650 tons which resulted in a monetary loss of about 1.18 million USD. If we didn't install the hail nets on our orchards, this loss would be higher.</p> <p>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). Therefore, these incidents are influencing our medium and long term financial planning.</p>
--	--	--

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

In recent years, Tekfen has started to officially integrate climate change into its strategy. As a Company, we have been collecting information on climate change and reporting internally following the CDP criteria since 2010. Below are some examples of how we monitored and acted against the impact of climate change as a result of integration to our business objectives and strategy.

New structures have been established in the Holding for dealing with issues such as sustainable growth, as environmental issues are becoming increasingly mainstream. This is one of the indicators that the Company is beginning to take strategic decisions into climate change and related issues. For example, The Management Review Meeting, attended by the Senior Management at Tekfen Construction, was held as "Carbon Neutral" to draw attention to climate change in 2016 across the Company. At Tekfen Holding level, due to the increasing risk climate change issues bring to the business environment, The Holding has started to closely monitor the environmental performance of individual companies.

A big step that is a result of considering the impacts of climate change, Tekfen decided to start renewable energy contracting due to the expected contraction in oil & gas contracting activities as a result of global aims to mitigate climate change in the EPC sector. Part of our short term strategy transformation, a separate department specializing in contracting renewable energy projects was found in Tekfen Construction and Tekfen Engineering.

Minimizing the consumption of energy and natural resources and reducing waste by encouraging recycling/reuse is among Tekfen principles. Therefore we implement numerous projects in our production facilities for energy efficiency. As a result of this principle, Toros Agri's Mersin Facility has won the "Energy Efficient Industrial Facility (EVET)" award given to facilities that has the highest "energy intensity reduction ratio" by the Renewable Energy

General Directorate of the Ministry of Energy and Natural Resources. Our Mersin Facility was able to reduce its energy intensity by 33.3% in the 2013-2015 period against reference energy intensity (REY) in 2008-2012 and win the first place in the Chemicals and Production of Chemicals sub-sector. Toros Agri has started to establish Energy Management System in parallel to ISO 50001 Standard in 2018. That means, with the implementation of the system, energy efficiency will increase and carbon footprint will decrease inversely.

Probably the single most important decision on climate-related business objective approved by our Toros Agri Board of Directors during the reporting period has been identified as significantly reducing our GHG emissions (especially N₂O) as part of our Toros Agri Mersin Fertilizer Production Plant. As a result of efforts made by our Working Group, together with the support received from NACAG (Nitric Acid Climate Action Group) and the manufacturers of N₂O catalysers, we have approved an investment of over USD 630,000 on a new catalyser system, with a new target of reducing our Scope 1 and 2 emissions by approximately 70% over the next five years.

For our contracting operations we make sure our contracting portfolio is diversified to stay ahead of our competition by developing new green business opportunities and adapting to the changing business and physical environment. An example for this is our decision to enter the renewable energy contracting field.

Starting with the management restructuring process in 2015, Tekfen has set major targets for renewable energy and energy production from waste for the medium term. In the long term, Tekfen is planning to become one of the major components of the eco-economy. After long negotiations, Toros Agri has acquired 70% stake in organic fertilizer manufacturer Gonen Energy. All the raw materials used in the plant are obtained from cattle and chicken farms, agricultural operations and food factories in the immediate area. Zero liquid discharge, advanced flue gas purification and a heat recovery system is combined to ensure that the Gonen Energy facility respects the environment in every possible way. In addition to the economic value generated by the electricity generation and organic fertilizer production, the plant eliminates 400 tons of organic waste per day, thus reducing GHG emissions around 62,537 tons CO₂ per year. Gonen Energy therefore performs a highly effective role in the resolution of the area's environmental pollution issues. The facility currently has; an electricity production capacity of 3.62 MW; and solid organic and liquid organic fertilizer production capacity of 15,000 tons and 10,000 tons per year respectively. When additional investments are completed, it will be able to produce 35,000 tons of organomineral fertilizer annually. Buildings are a major source of energy consumption and emissions. Tekfen Real Estate's projects in Turkey are LEED certified following the actions that were agreed to be implemented in Turkey's National Climate Change Strategy (2010-2023). Tekfen Real Estate is also one of the founders of CEDBİK (Turkish Green Building Association), emphasizing the importance Tekfen Holding puts on environmentally friendly buildings and climate change. Tekfen is also one of the founders of TEMA Foundation and has integrated environmental issues into its core business. Considering the activities described above, the value that Tekfen gives to nature is apparent.

In addition, Tekfen supports the "Earth Hour" event of WWF every year with Tekfen Tower Building.

Tekfen Engineering collaborates with TUBİTAK and İstanbul Technical University in the development of membrane-based technologies capable of capturing CO₂ emissions generated by natural gas extraction and energy production.

In its capacity as Turkey's biggest privately-owned agri-industrial concern, in 2017 Toros Agri authorized a first in the country's fertilizer-manufacturing industry by opening an R&D center at its Mersin plant. This plant has been awarded Ministry of Industry and Technology certification as the first center of its kind in Turkey devoted to plant nutrition and nutrients. The center's goals include developing new products that will further diversify Toros Agri's plant nutrients portfolio as well as addressing such issues as improving existing products, developing production processes, optimization, production-related energy conservation, and reducing environmental impact.

Toros Agri and the Cukurova Technocity operated by Cukurova University's Technology Transfer Office have entered into an agreement to collaborate on research looking into sustainable-agriculture issues. The goal of this agreement, which was signed in 2016, is to develop high-yield plant nutrition and fertilizing practices which are also eco-friendly.

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) (or Scope 3 category)

Scope 1+2 (location-based)

Base year

2019

Covered emissions in base year (metric tons CO₂e)

1,056,262

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

100

Target year

2025

Targeted reduction from base year (%)

15

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

897,822.7

Covered emissions in reporting year (metric tons CO₂e)

1,056,262

% of target achieved [auto-calculated]

0

Target status in reporting year

New

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

Please explain (including target coverage)

The target covers all our gross-global Scope 1 and Scope 2 GHG emissions. This target is set to be in line with the Well Below 2 Degrees Scenario (WB2DS). We target a reduction of 15 % from our gross-global Scope 1 and Scope 2 GHG emissions, over a period of 6 years, which translates to 2.50 % reduction per year on average. The target is also checked using the target setting tool of SBTi, which resulted in the same reduction figure to be in line with the IEA WB2C using the absolute contraction approach.

In the previous reporting year, we have reported an intensity target that was not company-wide and only included 90% of our Scope 1 and Scope 2 GHG emissions. However, in the current reporting year, as we have changed our operational boundary to include the overseas operations, we have also decided to take on a more vigorous company-wide target, which covers 100% of our Scope 1 and Scope 2 GHG emissions.

Target reference number

Abs 2

Year target was set

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based)

Base year

2019

Covered emissions in base year (metric tons CO₂e)

1,056,262

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

100

Target year

2037

Targeted reduction from base year (%)

40.2

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

631,644.676

Covered emissions in reporting year (metric tons CO₂e)

1,056,262

% of target achieved [auto-calculated]

0

Target status in reporting year

New

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

Please explain (including target coverage)

The target covers all our gross-global Scope 1 and Scope 2 GHG emissions.

This target is set to be in line with the Well Below 2 Degrees Scenario (WB2DS). We target a reduction of 40.2 % from our gross-global Scope 1 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 2.50 % reduction per year on average. After 2025 we are aiming to reduce our GHG emissions 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.

In the previous reporting year, we have reported an intensity target that was not company-wide and only included 90% of our Scope 1 and Scope 2 GHG emissions.

However, in the current reporting year, as we have changed our operational boundary to include the overseas operations, we have also decided to take on a more vigorous company-wide target, which covers 100% of our Scope 1 and Scope 2 GHG emissions.

C4.2

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

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

Other climate-related target(s)

C4.2a

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

Target reference number

Low 1

Year target was set

2018

Target coverage

Business division

Target type: absolute or intensity

Absolute

Target type: energy carrier

Electricity

Target type: activity

Production

Target type: energy source

Renewable energy source(s) only

Metric (target numerator if reporting an intensity target)

Percentage

Target denominator (intensity targets only)

Base year

2018

Figure or percentage in base year

221,230

Target year

2019

Figure or percentage in target year

225,655

Figure or percentage in reporting year

226,652

% of target achieved [auto-calculated]

122.5310734463

Target status in reporting year

Achieved

Is this target part of an emissions target?

This target is also a part of our absolute target to reduce Scope 1+Scope 2 GHG emissions by 15% until 2025 (Abs 1)

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

We had a target to increase our renewable energy generation by 2% with respect to the previous year in Samsun and Mersin facilities of Toros Tarım and in Gonen Enerji. We have exceeded this target and generated 2.45% more renewable energy in comparison to our generation figure in 2018.

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1

Year target was set

2019

Target coverage

Site/facility

Target type: absolute or intensity

Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Fossil fuel reduction target
cubic meters of natural gas consumed

Target denominator (intensity targets only)

metric ton of product

Base year

2018

Figure or percentage in base year

6.46

Target year

2020

Figure or percentage in target year

6.1983

Figure or percentage in reporting year

6.39

% of target achieved [auto-calculated]

26.7481849446

Target status in reporting year

Underway

Is this target part of an emissions target?

No

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

We have a target of reducing m3 of natural gas consumed per ton of product by 4.05% in Toros Agri's Samsun Plant.

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	6	
To be implemented*	6	2,134

Implementation commenced*	5	648,861
Implemented*	3	178
Not to be implemented	0	0

C4.3b

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

Initiative category & Initiative type

Energy efficiency in buildings
Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

40

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

11,003

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

60,681

Payback period

4-10 years

Estimated lifetime of the initiative

11-15 years

Comment

Old and less efficient lighting equipment used for exterior lighting of the Tekfen Tower was replaced with more efficient LED lighting fixtures resulting in an annual electricity savings of 86,500 kWh.

Initiative category & Initiative type

Energy efficiency in buildings
Building Energy Management Systems (BEMS)

Estimated annual CO2e savings (metric tonnes CO2e)

29

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

8,125

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

55,554

Payback period

4-10 years

Estimated lifetime of the initiative

11-15 years

Comment

In Tekfen Tower, the cooling systems of the electrical rooms were transformed throughout the building. The central system was cancelled, and more efficient DX units were installed.

Initiative category & Initiative type

Energy efficiency in production processes
Automation

Estimated annual CO2e savings (metric tonnes CO2e)

109

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

13,220

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

242,852

Payback period

16-20 years

Estimated lifetime of the initiative

11-15 years

Comment

The water preparation unit's control system modernization investment enables us to control the well pumps with drivers and to supply water that can perfectly match the demand. Raw water pools automation systems enable us to automatically turn the well pumps on or off. As a result of these applications and efficient usage of water wells, the nominal electricity usage of the pumps were decreased by 23% and resulting in an annual electricity savings of 237,139 kWh.

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.

C4.5

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

Yes

C4.5a

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

Level of aggregation

Group of products

Description of product/Group of products

According to a study published by IFA (International Fertilizers Association) titled "The Role of Fertilizers in Climate-Smart Agriculture":

Soils can store up to 50-300 tonnes of carbon per hectare, which is equivalent to 180-1100 tonnes of carbon dioxide (CO₂), and some 89% of agriculture's future mitigation potential is based on soil 2 carbon sequestration (IPCC, 2007). Carbon sequestration in cultivated soil can be increased by reducing tillage, adding organic amendments, using cover crops, and adding appropriate mineral nutrients for biomass production.

Increased soil organic matter improves soil health and productivity resulting in more CO₂ capture from the atmosphere.

Fertilizers, when used following site- and crop-specific Best Management Practices in the 4 areas of nutrient management (source, rate, time, and place) are important for adaptation to and mitigation against climate change.

Sustainable intensification of agricultural productivity on arable land not only promotes global food security but also reduces deforestation and loss of peatlands, wetlands, grassland, which, combined make up some 5 Gt CO₂-eq annually or 10% of global GHG emissions (AR5, chapt. 11).

Toros Agri implements nutrient stewardship programs and fertilizer best management practices (FBMPs) in order to encourage farmers to use fertilizers in an effective and efficient way.

To increase awareness on the correct application of fertilizers we are using several methods that include:

- Toros farmer app
- One-on-one meetings with the Toros Agri Distributors and authorized dealers
- Presentations / Meetings / Joining Agricultural Expo's
- Giving training to farmers

By the end of 2019, 10,724 plantations belonging to 9,762 farmers were included in the Toros Farmer database. When the number of distributors (1,264) and authorized dealers are taken into consideration a total of 11,026 members actively use this app.

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

Avoided emissions

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

Other, please specify

IFA "Role of Fertilizers in Smart Agriculture"

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

24.86

Comment

C5. Emissions methodology

C5.1

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

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)

Comment

We are not able to provide a market-based figure. Therefore, the location-based result has been used as a proxy since a market-based figure cannot be calculated.

C5.2

(C5.2) 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)

1,015,148.66

Comment

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

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

Comment

C6.3

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

Reporting year

Scope 2, location-based

41,113.76

Comment

We are not able to provide a market-based figure. Therefore, the location-based result has been used as a proxy since a market-based figure 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

Metric tonnes CO₂e

1,134,104.66

Emissions calculation methodology

Activity Data:

The activity data collected consists of the amount of ammonia purchased by Toros Agri, the consumed amounts of construction materials 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.

Emission Factors:

For Toros Agri: Ammonia emission factors are taken from 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.

For Tekfen Construction and Tekfen Manufacturing: The emission factors are taken from DEFRA's "Conversion Factors 2019 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.

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

100

Please explain

In the reporting year, we have revised our Scope 3 calculations to be in line with the category definitions of GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. Therefore this is the first year that the data for purchased goods and services are collected from our group companies and calculated using DEFRA's GHG emission factors for materials. We mainly focused on the purchased ammonia for fertilizer production and construction material as these are our biggest operations and therefore most of our Scope 3-Purchased Goods and Services impact lies under the Agri-Industry and Contracting Group's site/ facility activities.

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

Metric tonnes CO₂e

146,732.46

Emissions calculation methodology

Activity Data:

The following activity data are included in the fuel and energy-related Scope 3 emissions:

- 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.
- For upstream emissions of purchased electricity and transmission & distribution losses, the electricity consumption figures used to calculate the Scope 2 emissions are used.
- 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 WTT emissions of fossil fuels are taken from DEFRA's "Conversion Factors 2019 Full Set for Advanced Users" WTT fuels 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 upstream emissions of purchased electricity and transmission & distribution losses, emission factors published by International Energy Agency (IEA) are used in order to be compatible with the Scope 2 factors which are also taken from IEA.

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.

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

100

Please explain

Fuel consumption and electricity data are obtained from supplier invoices or waybills.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

109,174.46

Emissions calculation methodology

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 that are 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.

Emission Factors:

The emission factors for calculation of transportation and distribution activities are taken from DEFRA's "Conversion Factors 2019 Full Set for Advanced Users" Freightling 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.

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

100

Please explain

100% of the average travel distances are obtained from the transportation service provider. The average load for each shipment is taken from internal records of our weighbridges.

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

48,406.08

Emissions calculation methodology

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.

For the reporting period, we have included Tekfen Construction projects that are in foreign countries, therefore the volume of waste that is included in the calculations has increased significantly.

Emission Factors:

The emission factors for the calculation of emissions from the waste generated in operations are taken from DEFRA's "Conversion Factors 2019 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.

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

100

Please explain

We have Waste Management Systems in all of the sites/ facilities that are under our operational control.

All the waste resulting from our activities are 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 are included in this calculation.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

2,371.94

Emissions calculation methodology

Activity Data:

We obtain flight information from our travel agency. (Departure and destination ports, flight class, number of trips). We then use the 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.

Emission Factors:

The emission factors for the calculation of emissions from the waste generated in operations are taken from DEFRA's "Conversion Factors 2019 Full Set for Advanced Users" Business Travel-air tab. The emission factors 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.

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

100

Please explain

100% of the flight information is obtained from our travel agency.

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

16,349.27

Emissions calculation methodology

Activity Data:

We obtain 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 2019 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.

For the reporting period, we have included Tekfen Construction projects that are in foreign countries, therefore the employee commuting figures have increased significantly.

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

100

Please explain

100% of employee commuting distances are received from service providers.

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

Metric tonnes CO₂e

5,628

Emissions calculation methodology

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 that are used are ground (HGVs) and marine vessels. The data collected are average travel distances for each shipment and average load for each shipment.

Emission Factors:

The emission factors for calculation of transportation and distribution activities are taken from DEFRA's "Conversion Factors 2019 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.

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

100

Please explain

100% of the average travel distances are obtained from the transportation service provider. The average load for each shipment is taken from internal records of our weighbridges.

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 to our business.

Use of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

2,374,310.73

Emissions calculation methodology

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 denitrification, 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 station.

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 2019 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.

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

0

Please explain

This is the first year we have included the use phase of the fertilizers that we produce.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Please explain

Our main products are fertilizers and fresh fruits, both of which don't require any end of life treatment.

Our construction projects also have a very long life-span, therefore, end of life treatment for these projects are also not deemed relevant for our GHG inventory.

Downstream leased assets

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

3,982.79

Emissions calculation methodology

Activity Data:

The electricity and natural gas consumption figures for our downstream leased assets are obtained as activity data.

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.

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

100

Please explain

In the previous reporting periods, the electricity we have sold was also reported under this category, however this year we have revised our methodology to be in line with the category descriptions given under the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

The emissions resulting from the use of electricity sold to 3rd parties are now reported under Category 3: Fuel and Energy Activities Not Reported Under Scope 1 or 2.

Franchises

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

6,174.1

Emissions calculation methodology

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.

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

100

Please explain

Our dealers are considered as franchises.

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 a 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	4,141	The biogenic carbon data comes from Gonen Renewable Energy 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 the anaerobic digestion process. The resulting biogas is utilized to produce heat and electricity.

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

0.0004297

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

1,056,262.42

Metric denominator

unit total revenue

Metric denominator: Unit total

2,458,394,330

Scope 2 figure used

Location-based

% change from previous year

5.69

Direction of change

Increased

Reason for change

The main reason for the stated 5.69 % increase in our gross Scope 1 and 2 emissions is the revision of the boundary of our GHG inventory.

In the previous years, the scope of our GHG inventory boundary was limited to our local operations, therefore we didn't report the GHG emissions from our construction operations in foreign countries. In 2019 following a decision by the board, we have included all of our overseas construction activities, therefore we have enlarged our organizational boundary.

The sum of Scope 1 and Scope 2 GHG emissions from our overseas construction operations in 2019 is 154,729 tons CO2e.

If we were to report using our old boundary, the intensity figure would be decreased by 9.79%.

Intensity figure

61.79

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

1,056,262.42

Metric denominator

full time equivalent (FTE) employee

Metric denominator: Unit total

17,094

Scope 2 figure used

Location-based

% change from previous year

26.26

Direction of change

Increased

Reason for change

The increase resulted from a 12.53% increase in our gross Scope 1 and 2 emissions due to the inclusion of our overseas construction operations in our GHG inventory boundary.

Also, the number of our employees has decreased by 10.88 %, which resulted in an increase of 26.26% of our GHG emissions / full-time employee.

If we were to report using our old boundary the increase in intensity would be 7.77%.

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	199,284.74	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	812,135.03	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	233.05	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	3,495.84	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	862,558.39
Qatar	92,104.32
Kazakhstan	13,814.63
Azerbaijan	229.27
Saudi Arabia	46,240.97
Iraq	201.08

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)
Contracting	169,853.45
Agri-Industry	845,002.11
Other Activities	293.1

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	831,664.04	Scope 1 GHG emissions resulting from fertilizer production in our 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	Scope 2, market-based	Purchased and consumed electricity, heat,	Purchased and consumed low-carbon electricity, heat, steam or cooling
----------------	-------------------------	-----------------------	---	---

	based (metric tons CO2e)	(metric tons CO2e)	steam or cooling (MWh)	accounted for in Scope 2 market-based approach (MWh)
Turkey	38,974.59	0	84,543.57	0
Qatar	881.01	0	1,812.79	0
Kazakhstan	369.46	0	603.7	0
Azerbaijan	483.09	0	989.94	0
Saudi Arabia	398.27	0	561.73	0
Iraq	7.34	0	8.08	0

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)
Contracting	12,093.26	0
Agri-Industry	28,649.81	0
Other Activities	370.69	0

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

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

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Chemicals production activities	22,657.96		Purchased electricity-related CO2 emissions from our 3 fertilizer production facilities in Samsun, Mersin, and Ceyhan.

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 tCO ₂ e from purchased feedstock	Explain calculation methodology
Ammonia	84.21	<p>The amount of ammonia purchased during the reporting period is collected using the data obtained from the shipping company.</p> <p>The ammonia purchased in tons is categorized according to the origin of purchase.</p> <p>Ammonia emission factors are taken from the Fertilizers Europe online calculator.</p> <p>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.</p> <p>Ammonia emission factors are taken from 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.</p> <p>The calculation was conducted according to the methodology outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.</p>

C-CH7.8a

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

	Sales, metric tons	Comment
Carbon dioxide (CO ₂)	0	We do not sell products that are greenhouse gasses.
Methane (CH ₄)	0	We do not sell products that are greenhouse gasses.
Nitrous oxide (N ₂ O)	0	We do not sell products that are greenhouse gasses.
Hydrofluorocarbons (HFC)	0	We do not sell products that are greenhouse gasses.
Perfluorocarbons (PFC)	0	We do not sell products that are greenhouse gasses.

Sulphur hexafluoride (SF6)	0	We do not sell products that are greenhouse gasses.
Nitrogen trifluoride (NF3)	0	We do not sell products that are greenhouse gasses.

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	3,364.72	Decreased	0.36	<p>Toros Agri Samsun and Mersin Plants recover waste heat to produce electricity in Steam Turbine Generator (STG) Unit. In 2019 we have also acquired majority shares (70%) of Gonen Renewable Energy Production Inc. Samsun Facility, Mersin Facility, and Gonen Facility have produced a total of 226,652.16 MWh of renewable energy in 2019.</p> <p>Although the renewable energy produced is 2,45 % higher than the previous year, as we have supplied 91,743.92 MWh of the electricity produced to the grid, our total renewable energy consumption decreased from 142,194.14 MWh in 2018 compared to 134,957.94 MWh in 2019 (7,298.75 MWh less renewable electricity was consumed in 2019 which is equal to 3,364.72 tCO2e).</p> <p>The decrease percentage was calculated as follows: $3,364.72 \text{ tCO}_2\text{e} / 938,648.90 \text{ tCO}_2\text{e} * 100 = 0.36\%$.</p>

Other emissions reduction activities	178	Decreased	0.02	Our Scope 1+Scope 2 emissions were 938,648.90 tCO ₂ e in 2018. In 2019, we have implemented 3 emissions reduction initiatives, resulting in a total of 178t CO ₂ e reduction. The decrease percentage was 0,019% (178 / 938,648.90 * 100 = 0.019%).
Divestment	78.8	Decreased	0.01	Our Scope 1+Scope 2 emissions were 938,648.90 tCO ₂ e in 2018. In 2019 Tekfen Real Estate has ceased its operations. Tekfen Real Estate's 2018 Scope 1+2 GHG emissions were 152.47 tons. This value decreased to 73.77 tons in 2019. The decrease in emissions value in % is calculated as follows: (152.47-73.77) / 938,649 *100 = 0.01 %
Acquisitions	1,550.61	Increased	0.17	In 2019 Tekfen Agri acquired Gonen Renewable Energy, which added 1,550.61 tons of CO ₂ e to our GHG emissions inventory. Our 2018 Scope 1+2 GHG emissions were 938,649 tCO ₂ e. The increase in emissions value in % is calculated as follows: (1550.61) / 938,649 *100 = 0.17%
Mergers	0	No change		
Change in output	36,249.23	Decreased	3.86	In 2019 our Nitric Acid production was decreased. As N ₂ O is one of the main GHG emission sources, the decrease in Nitric Acid production resulted in a 36,249.23 ton decrease in the process emissions of Toros Agri. Our total Scope 1+2 GHG emissions in 2018 were 938,649 tCO ₂ e. The decrease in emissions value in % is calculated as follows: 36,249.23 / 938,649 *100 = 3.86 %
Change in methodology	0	No change		

Change in boundary	159,032.47	Increased	16.94	<p>In 2019 we have included the overseas construction projects of Tekfen Construction in our organizational boundary.</p> <p>Also, the operational control of HTF (which is a subsidiary of Tekfen Agri) was acquired by Tekfen Agri in 2019. This resulted in a major increase in our Scope 1+2 GHG emissions. Our total Scope 1+2 GHG emissions in 2018 were 938,649 tCO₂e. The total amount of increase because of this change in the boundary is 159,032.47 tons CO₂e. The increase in emissions value in % is calculated as follows: $(159,032.47) / 938,649 * 100 = 16.94 \%$</p>
Change in physical operating conditions	0	No change		
Unidentified	3,098.81	Decreased	0.33	<p>The unidentified change in GHG emissions (3098.81 tCO₂e) is the resulting change in total emissions after all of the changes are attributed to specific reasons.</p> <p>As our operations are extremely diverse, these changes may result from changes in output but we were not able to clearly identify the main reason, therefore these changes are reported under Unidentified changes.</p> <p>The emissions value % is calculated as follows: $3098.81/938,649*100 = 0.33\%$</p>
Other	0	No change		

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)	0	761,898.63	761,898.63
Consumption of purchased or acquired electricity		0	88,519.81	88,519.81

Consumption of self-generated non-fuel renewable energy		134,957.94		134,957.94
Total energy consumption		134,957.94	850,418.44	985,376.37

C-CH8.2a

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

	Heating value	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	97,814.24
Consumption of purchased or acquired electricity		49,149.59
Consumption of self-generated non-fuel renewable energy		134,485.11
Total energy consumption		281,448.94

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

C8.2c

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

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

69,558.21

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

69,558.21

MWh fuel consumed for self-generation of steam

0

Emission factor

0.00194

Unit

metric tons CO2e per m3

Emissions factor source

IPCC Chapter 2 Stationary Combustion (Table 2.2)

Comment

Fuels (excluding feedstocks)

Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

16,987

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

16,987

MWh fuel consumed for self-generation of steam

16,987

Emission factor

1.27422

Unit

metric tons CO2e per metric ton

Emissions factor source

IPCC Chapter 2 Stationary Combustion (Table 2.2)

Comment

Fuels (excluding feedstocks)

Fuel Oil Number 1

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

271.82

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

271.82

MWh fuel consumed for self-generation of steam

0

Emission factor

0.00318

Unit

metric tons CO₂e per liter

Emissions factor source

DEFRA 2019 Conversion factors – Fuels-Fuel oil

Comment

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1,109.84

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

1,109.84

MWh fuel consumed for self-generation of steam

0

Emission factor

2.88145

Unit

metric tons CO₂e per metric ton

Emissions factor source

IPCC Chapter 2 Stationary Combustion (Table 2.2)

Comment

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

623,293.02

MWh fuel consumed for self-generation of electricity

115,168.4

MWh fuel consumed for self-generation of heat

508,124.62

MWh fuel consumed for self-generation of steam

0

Emission factor

0.00266

Unit

metric tons CO₂e per liter

Emissions factor source

IPCC Chapter 3 Mobile Combustion (Table 3.2.1 & 3.2.2)

IPCC Chapter 2 Stationary Combustion (Table 2.2)

Comment

Average of Mobile (0.0026705 metric tons CO₂e per liter) and Stationary diesel emissions factors (0.0026349 metric tons CO₂e per liter). As we have included the overseas operations of Tekfen Construction in our boundary, the diesel oil consumption figures have increased especially in mobile combustion activities.

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

14,930.41

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

14,930.41

MWh fuel consumed for self-generation of steam

0

Emission factor

0.00227

Unit

metric tons CO₂e per liter

Emissions factor source

IPCC Chapter 3 Mobile Combustion (Table 3.2.1 & 3.2.2)

Comment

Gasoline consumption has increased due to the inclusion of our overseas construction projects in our inventory boundary.

Fuels (excluding feedstocks)

Liquefied Natural Gas (LNG)

Heating value

Total fuel MWh consumed by the organization

34,006.19

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

13,620.18

MWh fuel consumed for self-generation of steam

20,386.01

Emission factor

2.55005

Unit

metric tons CO2e per metric ton

Emissions factor source

DEFRA 2019 Conversion Factors – FUELS LNG

Comment

Fuels (excluding feedstocks)

Compressed Natural Gas (CNG)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1,742.15

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

1,742.15

MWh fuel consumed for self-generation of steam

0

Emission factor

2.54204

Unit

metric tons CO2e per metric ton

Emissions factor source

DEFRA 2019 Conversion Factors – FUELS CNG

Comment

C8.2d

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	341,870.25	250,126.33	226,701.86	134,957.94
Heat	103,289.18	103,289.18	0	0
Steam	20,386.01	20,386.01	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.

	Total gross generation (MWh) inside chemicals sector boundary	Generation that is consumed (MWh) inside chemicals sector boundary
Electricity	211,917.48	134,597.49
Heat	77,315.85	77,315.85
Steam	20,386.01	20,386.01
Cooling	0	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

985,376.37

Metric numerator

Total energy consumption in MWh

Metric denominator (intensity metric only)

No denominator. Not an intensity metric.

% change from previous year

127

Direction of change

Increased

Please explain

We have revised the organizational boundary of our GHG inventory to include the overseas operations of Tekfen Construction. This resulted in a 127% increase in our total energy consumption which was 433,564.46 MWh in 2018.

C-CH9.3a

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

Output product

Nitric acid

Production (metric tons)

395,235

Capacity (metric tons)

405,280

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

2.05

Electricity intensity (MWh per metric ton of product)

0.13

Steam intensity (MWh per metric ton of product)

0

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

0.096

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.

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%	712,097	As part of our highest efforts to continuously work on developing new and more environmentally friendly products, we have invested in a 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

				<p>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.</p> <p>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 Organomix (worm castings), CalMag, two new entries with new ingredients in the water-soluble NPK market (Nutriactive and Greenfeed) and FloraTech (lawn fertilizer). In the reporting year, sales of these specialty fertilizers went up by 42.8% with respect to 2018.</p> <p>The R&D budget dedicated to the Center was USD 712,097 in the reporting period.</p>
--	--	--	--	--

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.

C10. Verification

C10.1

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

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	No third-party verification or assurance

C10.1a

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

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

-  Mersin_2019_Scope 1 Verification Report.pdf
-  Mersin_2019_Scope 1 Verification Letter.pdf
-  Ceyhan_2019_Scope 1 Verification Letter.pdf
-  Ceyhan_2019_Scope 1 Verification Report.pdf
-  Samsun_2019_Scope 1 Verification Letter.pdf
-  Samsun_2019_Scope 1 Verification Report.pdf

Page/ section reference

In 2019, Scope 1 GHG emissions of our 3 fertilizer plants which fall under the scope of Turkish MRV regulation, were verified. Please see attached the verification letters in CDP format signed by the Lead Verifier.

The GHG emissions of these 3 plants make up 81.86% of our total Scope 1 GHG emissions.

The verification reports in Turkish are also attached. In these reports, you can find the verified amounts in Page 3 under the title "Toplam Emisyon Miktarı tCO₂e" (Total emissions tCO₂e).

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

82

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

-  Mersin_2019_Scope 2 Verification Certificate.pdf
-  Ceyhan_2019_Scope 2 Verification Certificate.pdf
-  Mersin_2019_Scope 2 Verification Letter.pdf
-  Tekfen Construction_TANAP CS_2019_Scope 2 Verification Letter.pdf
-  Samsun_2019_Scope 2 Verification Letter.pdf
-  Tekfen Construction_TANAP CS_2019_Scope 2 Verification Certificate.pdf
-  Samsun_2019_Scope 2 Verification Certificate.pdf
-  Ceyhan_2019_Scope 2 Verification Letter.pdf

Page/ section reference

Scope 2 emissions of our Mersin, Ceyhan, and Samsun plants and TANAP Compressor Stations (CS) Project of Tekfen Construction were verified.

Verification letters in CDP template are attached. Also, 2nd pages of the attached verification certificates show the verified amounts in English. The 3 plants of Toros Agri and TANAP CS Project Scope 2 emissions make up 74,54 % of our total Scope 2 GHG emissions.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

75

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 was also published on Turkish Ministry of Environment and Urbanization website. We anticipate being regulated under the Turkish ETS system until 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 on a new N₂O catalyser system at our Mersin Fertilizer Production Plant that will reduce our N₂O emissions around 85%. N₂O emissions comprise around 80% of our Scope 1 GHG emissions, and we believe we have a major opportunity of 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)

27.53

Variance of price(s) used

No variance in price is considered. Turkey's carbon pricing mechanism is under development and projections will be unreliable.

Type of internal carbon price

Shadow price

Impact & implication

In a recent 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))

Based on the 2019 average EU ETS allowance price for the primary markets published by EEX on "EEX EUA Primary Auction Spot Report-2019" (€ 24.58 per t CO₂ which equals to 27.53 USD).

Our verified GHG emissions under the Turkish MRV were 831,046 tons CO₂e in the reporting year. 60% of these emissions equal to 498,627.60 tons CO₂e. Multiplying this liability with the internal price of 27.53 USD. The amount of our total annual liability is approximately USD 13.7 million due to the GHG emissions arising from fertilizer operations.

Using a 27.53 USD/tCO₂e EU ETS market price for allowances in 2019, we presented 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 a USD 630,000 investment in a new catalyzer to drastically reduce our N₂O emissions by around 85%.

C12. Engagement

C12.1

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

Yes, our suppliers

Yes, our customers

Yes, other partners in the value chain

C12.1a

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

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

10.8

% total procurement spend (direct and indirect)

30.85

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

29.48

Rationale for the coverage of your engagement

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.

We obtain sustainability information of our raw material suppliers, providers of technical goods/services and subcontractors, with the goal to promote sustainable development in the supply chain and stakeholders, and to improve suppliers' awareness and their environmental-social standards. The evaluation process is based on an online assessment by a questionnaire.

The supplier assessments provide us with valuable information on their sustainability performance, including GHG emissions, energy and emission reduction projects, and relevant international certifications.

Our suppliers are evaluated based on risk due to the size, their goods/products, and the scale of our supplier portfolio. The proportion of relevant suppliers evaluated by the end of 2019 was around 10.8%. This corresponds to 30,85% of our total procurement spend. Tekfen Holding company-wide Supply Chain Policy has been recently issued and our goal is to increase the rate of suppliers to be evaluated of their sustainability performances.

Tekfen Construction's suppliers of:

- Structural Steel
- Reinforcing bar
- Asphalt
- Bricks

- Concrete
- Insulation Materials
- Tyres, and
- Wood

are assessed under this high-impact category.

Similar suppliers for our other group companies that are assessed under the high-impact category include:

- Iron Sheet supplier for Tekfen Manufacturing,
- Ammonia and other raw material (Phos Acid, Phos rock, MOP, Urea, Sulphur, Ammonium Sulphate, DAP) suppliers for Toros Agri,

The Scope 3 GHG Emissions related to these high-impact suppliers make up 29.48% of our total Scope 3 GHG emissions.

We collect activity data from these suppliers in order to calculate the Scope 3 emissions.

Impact of engagement, including measures of success

The score in our online assessments provides us a direct supplier performance indicator.

It can be positively influenced by reporting on energy use and greenhouse gas (GHG) emissions, on energy and emission reduction projects, and by indicating that the supplier reports to CDP or holds ISO 50001 and ISO 14001 certifications.

Our aim as a measure of success is to gradually increase the number of suppliers assessed based on the sustainability parameters and reach 100% of our supply chain, have their commitment to our procurement and sustainability policies on a local level, and integrate the temporary project sites' suppliers.

The success indicator for us is the increasing number of our suppliers who are aware of climate change and water management. The increase in the number of our suppliers who report to CDP and have ISO 50001, ISO 14001 certification is likewise an indicator of success for us as well.

Comment

C12.1b

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

Type of engagement

Education/information sharing

Details of engagement

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

61.71

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

61.71% 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

We have reached 10.03% of all wheat fields in the country through our Toros Farmer App. By the end of 2019, 11,026 members are using our Toros Farmer App which shares educational information with 9762, farmers, 10,724 plantations, and 1,264 distributors. All farms that are registered in the system are monitored constantly and recommendations are shared by farmers. A 14% efficiency increase was achieved per m² crop area (14% more wheat in kg from the same area). In the previous reporting year, we have reached 7.3% of the wheat fields in Turkey, our reach has increased by an impressive 37.4% up to 10.03% of the wheat plantations in 2019.

In 2019 we have performed 3,651 visits to our distributors, 4,996 visits to Farmers, 269 meetings with agricultural companies, and 39 marketing activities (meetings, presentations, expos). We have also performed 156 educational activities with our Toros Farmer Education Bus and 15 Drone Flights.

The continuous increase in these numbers compared to the previous year is an indicator of success for us.

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, we 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 combats deforestation.

Initiatives: We have joined the United Nations Global Compact (UNGC) on July 2018. By subscribing to 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 making stakeholders knowledgeable 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 by conforming to the LEED criteria set out by the US Green Building Council in all our new Tekfen Real Estate projects. 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, we continued collaboration with Istanbul Technical University on a carbon capture project as part of the national Scientific and Technological Research Council of Turkey (TUBITAK) Support Project. The project aims to capture CO₂/CH₄ emissions arising as a result of synthetic natural gas and energy production from coal and biomass via the development of mixed matrix durable composite membranes in hollow fiber configuration. As carbon capture is seen as one of the most effective way to comply with limiting the global warming to 1.5°C target, we are very ambitious and keen on pursuing our efforts on this topic.

Action Groups: We consider our fertilizer production operations as the forefront of our GHG emissions reduction initiative, and in order to maximize the emissions reduction amount, we collaborate with well-known expert action groups such as Nitric Acid Climate Action Group (NACAG). Our current collaboration with NACAG is to find the most feasible N₂O emissions reducing catalyser system to implement at our Toros Agri Mersin Fertilizer Production Plant which constitutes around 80% of our gross global Scope 1 emissions.

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 which will be built in Barilla’s Foggia pasta factory in Italy to supply process steam. During the HIFLEX 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 and a 2.5 MWth receiver includes all components of a commercial-scale plant except for the state-of-the-art steam turbine.

C12.3

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

- Direct engagement with policy makers
- Other

C12.3a

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

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Energy efficiency	Support	We give feedback to the draft regulations that are open to contribution by the Turkish government. As a member of INTES (Turkish Employers Association of Construction Industries), we engage with policymakers in issues that relate to the construction sector. INTES is a participant in World Energy Council (As official Turkey Delegate) as well as is a Board Member in the Smart Transportation Systems Association and collects opinions from all member	Buildings use 72% of national electricity consumption in Turkey. In addition, buildings still carry 40% of total energy consumption, including fossil fuels in Turkey. Energy-efficient buildings reduce national greenhouse gas emissions by 15-20%. Therefore, we support the continuation of Turkish Regulation on Energy Efficiency. In addition, Tekfen supports the legislation with no exceptions.

		contractors including our Group Company Tekfen Construction.	
Cap and trade	Support	We have attended the ETS Sectors Advisory Meeting in the scope of EU ETS Regulation Impact Analysis Workshop part of Technical Support Project for Solution Based Strategy and Action Plan for Low Carbon Development. This process is coordinated by the Ministry of Environment and Urbanisation and is conducted as part of Partnership for Market Readiness (PMR) with the aim of Modelling of Financial, Economic and Sectoral Impacts of Carbon Pricing in Turkey	We support an Emissions Trading System to be implemented in Turkey as it provides stronger regulatory stability than the current environment.

C12.3e

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

Tekfen is a founding member of TEMA (The Turkish Foundation for Combating Soil Erosion for Reforestation and the Protection of Natural Habitats) and CEDBIK (Turkish Green Building Association), two important NGOs in regards to environment and sustainability initiatives in Turkey and is actively involved in creating awareness regarding environmental issues, best practices and green buildings. For example, due to awareness raising activities by mentioned NGOs and other supporters, Turkey has put in place a regulation covering energy efficiency in buildings. We also attend TUSIAD's panels and activities regarding climate change and are involved in awareness raising activities especially in the business world regarding climate change. TUSIAD (Turkish Industry and Business Association) works closely with the Turkish business world to work towards sustainable development. Moreover, TUSIAD routinely issues opinions on existing as well as lacking policies and regulations with regards to environment and climate change via feedback received from its members. As Tekfen, we consider this our responsibility to contribute to these opinions and influence policy makers.

C12.3f

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

Climate change related direct and indirect activities are coordinated by both the Sustainability Committee and Holding Health, Safety, Environment & Quality (HSE&Q) Coordinatorship. An HSE&Q Coordination Group was established with representatives from all group companies. The representatives of all group companies meet periodically and the meeting is chaired by the Holding HSE&Q Coordinator.

Strategy and activities regarding climate change is shared with the group company representatives. The implementation of the activities are monitored by Holding HSE&Q Coordinator and the results are reported to Tekfen Group of Companies' President and CEO. Additionally, Tekfen Holding has formed a Sustainability Committee which meets quarterly to discuss the Group Companies' progress and strategies on a wide range of sustainability issues covering climate change strategies. As a result of the discussions held at both groups together with the feedback received from the Board of Directors, we consequently plan and initiate our direct and indirect activities with our value chain, including the policy makers on climate-related issues.

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_2019.pdf

Page/Section reference

112-113 (Page 58 in the attached PDF)

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Other metrics

Comment

We publish climate related information in Tekfen Holding's annual Report.

Publication

In voluntary sustainability report

Status

Complete

Attach the document

Page/Section reference

58-62 & 104-105 In the report (Page 30-32 & Page 53 in the attached pdf)

Content elements

- Governance
- Strategy
- Risks & opportunities
- Emissions figures
- Other metrics

Comment

C15. Signoff

C-FI

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

C15.1

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

	Job title	Corresponding job category
Row 1	President & 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 am submitting to	Public or Non-Public Submission
I am submitting my response	Investors	Public

Please confirm below

I have read and accept the applicable Terms