# Welcome to your CDP Climate Change Questionnaire 2019

# 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 Real Estate Development. The Group has 43 companies and 11 subsidiaries. Tekfen Holding, which owns all the companies and subsidiaries of Tekfen Group, is listed on Borsa Istanbul's BIST 30 Index. In 2018, the Group had USD 2,308 million in revenues and assets of USD 2,287 million. With 19,180 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.

The Contracting Group, which includes 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. It is a sector leader for its capacity to deliver the most challenging projects and it has established a brand recognition through its commitment to maintaining global standards of quality, its ways of doing business, its experience, and the importance it places on health, safety and environment. Tekfen Construction is the preferred partner of many international companies.

The group's extensive experience is concentrated, first and foremost, on constructing oil, gas and petrochemical facilities. It offers engineering, procurement, construction (EPC) turn-key solutions for pipe lines, land and sea terminals, tank farms, oil refineries, offshore platforms, pumping and compressor stations, power stations, industrial facilities, highways and metros, sports complexes, infrastructure projects and superstructures. Tekfen Manufacturing's Derince Plant as well as Ceyhan Steel Structure Fabrication Plant and Bayıl Steel Structure Fabrication Plant within Tekfen Construction, specialize in steel fabrication and process equipment, and the construction of storage tanks. As of end-2018, Tekfen Construction's active projects portfolio had a contract value of USD 2.75 billion. In Engineering News-Record's 2018 list of the world's 250 biggest international contractors based on their 2017 operations, Tekfen Construction ranked in 98th position. Directly under the Contracting Group, Tekfen Engineering provides engineering design, procurement and project management services for group and non-group projects. The company undertakes technologically challenging projects requiring great know-how and it is one of Turkey's leading engineering companies in its sector.

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 63th 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 1,256 dealers and authorized sales points throughout Turkey, enabling it to distribute its products to every corner of the country. Terminal services is an important non-agricultural area of business for Toros Agri.
Set up in 2017, in order to be involved in agricultural production, Tekfen Agri is active in the areas of techno agriculture as well as crop seed and fruit production and export. Adana-based Tekfen Agripark, one of Turkey's first techno-agriculture research centres, explores and exploits Turkey's rich biodiversity in order to produce disease-free quality seeds and saplings for farmers. Tekfen Agripark was awarded R&D center certification in 2018.
Taken over by Tekfen Agri in early 2018 when a 90% stake in the company was acquired, Alanar Fruit is one of Turkey's largest growers of high-quality stone fruit. About 70% of the fruit that the company grows in its own orchards or procures from other growers is exported. Alanar Fruit's sister company Alara Fidan is a nursery that produces high-quality, high-yield saplings.
Tekfen Real Estate Group engages in investment, project development, construction management and facility management in the real estate sector. Within the group, Tekfen Real Estate Development& Investment provides project development and management services, while Tekfen Tourism& Facilities Management (Tekfen Services) handles facility management services. As the author of the first green building projects in Turkey, the Real Estate Group is also founding member of the Turkish Green Building Council (CEDBİK).
Aside from its Contracting, Agri-Industry and Real Estate areas of business, Tekfen Group is involved in insurance, through Tekfen Insurance and venture capital investment through Tekfen Ventures.

# 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 |
|---|---|---|---|
| Row 1 | January 1, 2018 | December 31, 2018 | No |

# C0.3

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

Turkey

# C0.4

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

USD

# C0.5

**(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas 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**

# 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 | Climate-related issues including performance review, reporting and risk/opportunity management are among the responsibilities of Tekfen Holding's Chairman of the Board. Board Members are directly informed on climate issues in Tekfen Holding Board Meetings. Chairman of the Board states Tekfen's values, one of them is "the protection of nature and the environment". The Chairman of the Board follows climate-related issues closely. Therefore, we can say that our Chairman of the Board is the highest responsible person for climate-related issues. |
| Chief Executive Officer (CEO) | Tekfen Holding's CEO has the ultimate responsibility to monitor and approve the annual CDP Climate Change disclosure content. The CEO follows the reporting outcomes and reviews the improvement points identified for the short-medium and long term. Therefore, the CEO had an executive responsibility while managing climate-related issues in Tekfen Holding. |

## C1.1b

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

| Frequency with which climate-related issues are a scheduled agenda item | Governance mechanisms into which climate-related issues are integrated | Please explain |
|---|---|---|
| Scheduled – some meetings | Reviewing and guiding strategy<br>Reviewing and guiding major plans of action<br>Reviewing and guiding risk management policies<br>Reviewing and guiding annual budgets<br>Reviewing and guiding business plans<br>Setting performance objectives<br>Monitoring implementation and performance of objectives<br>Overseeing major capital expenditures, acquisitions and divestitures<br>Monitoring and overseeing progress against goals and targets for addressing climate-related issues | 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.<br>In September 2017, the Sustainability Committee (SC) was established and is being chaired by Vice President of Corporate Affairs. The committee is also a subcommittee of the Corporate Governance Committee. Sustainability Committee 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. The Board of Directors reviews and guides business plans and approves annual budgets. Sustainability Committee sets performance objectives for climate change and water management while also monitoring the realization of climate change and water-related objectives on behalf of the Board of Directors. Changes in emissions data are also reported to the Board of Directors annually. |

## 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 C-Suite Officer, please specify<br>Vice President of Corporate Affairs | 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 |
| Safety, Health, Environment and Quality committee | 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 Executive Board, which includes our CEO as the Chairman, is responsible for providing governance and oversight over strategy, operations as well as management of the Holding and its Group Companies. In order to do so, the Executive Board holds bi-weekly meetings where they discuss and delegate the authority to manage day-to-day operations of the Company including climate change-related strategy. Therefore, as the chairman of the Executive Board, our CEO represents the highest responsibility for overall governance of climate-related issues.

The Sustainability Committee is formed under the Corporate Governance Committee in order to help the Board of Directors oversee and effectively manage climate-related issues with a holistic approach. The Committee consists of management-level members appointed by top management of Tekfen Holding and the general managers of Tekfen Group Companies. 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. The Sustainability Committee is regularly being notified on sustainability related issues deemed crucial by the Holding HSE and Quality Coordinator who is also a member of the Sustainability Committee. The Vice President (VP) of Corporate Affairs is the Chairman of the Sustainability Committee and also the member of the Executive Board. The VP of Corporate Affairs briefs the Executive Board that consists of the CEO and Group

Vice Presidents regularly on current and emerging climate change-related issues including material risks and opportunities together with carbon emissions performance as well as annual emissions reporting outcomes.
Material issues, risks, and opportunities related to climate change are identified and managed by the Health, Safety, Environment and Quality Coordination Group which is comprised of Group Company HSE representatives. 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.
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?**

Yes

# 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).**

**Who is entitled to benefit from these incentives?**

Corporate executive team

**Types of incentives**

Monetary reward

**Activity incentivized**

Emissions reduction project

**Comment**

Toros Agri is the source of %96 of our GHG emissions. Therefore Toros Agri's emission reduction projects and targets will considerably affect us. Accordingly, Toros Agri has corporate-wide 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.

**Who is entitled to benefit from these incentives?**

All employees

**Types of incentives**

Recognition (non-monetary)

**Activity incentivized**

Behavior change related indicator

**Comment**

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) Describe what your organization considers to be short-, medium- and long-term horizons.**

| | From (years) | To (years) | Comment |
|---|---|---|---|
| Short-term | 0 | 1 | Our short-term horizon is defined as 1 year which is the period that covers of our detailed OPEX and CAPEX plan for both corporate management and risk management. |

| | | | |
|---|---|---|---|
| Medium-term | 1 | 5 | We define our medium-term horizon based on Tekfen Holding Strategic Plan which covers a 5-year plan. Therefore, 1 to 5 years is considered as medium-term for our Company. |
| Long-term | 5 | 10 | Any time horizon over 5 years is considered as long-term for Tekfen Holding. This is applicable to all business aspects including risk management. Moreover, long-term climate-related risks are evaluated on a scenario basis consistent with the horizons established by the international organisations such as IPCC and IEA covering 2030 and 2050 as crucial milestones. |

# C2.2

**(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.**

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

# C2.2a

**(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.**

| | Frequency of monitoring | How far into the future are risks considered? | Comment |
|---|---|---|---|
| Row 1 | Six-monthly or more frequently | >6 years | |

# C2.2b

**(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.**

In Tekfen Holding, the top management and all employees are responsible for effective risk management. Climate-related risks are identified, assessed and managed at a Group Company level and then consolidated and monitored at the Holding level. All Tekfen Group Companies are responsible for determining, monitoring and making decisions on necessary actions and periodically reporting the risks to the top management.
The Strategic Planning and 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. Climate and water risks at corporate level are considered under strategic, financial and compliance risks while at 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).
The first step of risk management is 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 is also considered.
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 make 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.
Risks are graded based on a portfolio approach. Risk portfolio, including risks with grades more than a certain threshold, is reported to the Board of Directors (BoD) every two months. Therefore, these risks are also monitored by the BoD through Early Detection of Risks Committee who consolidates the risk assessments conducted by each Group Company Board. In Tekfen HSE Policy, risk and opportunity management is addressed as: Ensure the risks and opportunities that can affect people, assets, environment, conformity of products and services and the ability to enhance customer satisfaction are duly addressed.
**Company Level:** Each Group Company's Top Management uses risk management actively in the decision making processes. CRM is integrated into main planning processes such as strategic planning, business planning and operational management. Risks related to important decisions are identified and graded. In addition, top management of companies make sure proper precautions are designed, applied and the process is run effectively for all risks identified. Tekfen Group Companies do regular risk assessments every 2 months and report to the Holding. Risk assessment of high risk projects, activities, locations, tasks and operational areas are done more frequently.
**Asset Level:** Each project/facility has its own risk assessment. Site HSE Management identifies/assesses climate-related risks and reports to Project/ Facility Manager who notifies site specific critical risks to Company Risk Manager. Projects/Facilities also use CRM methods defined above.
For activity type risk assessments, Site HSE Management complies with EMS as per ISO 14001. Critical climate-related risks are reported to Site Manager who reports these risks to Company Risk Manager and HSE Manager.

We identify and assess; short-term climate-related risks (<1 yr) under ISO 14001 EMS, and medium (1-5 yrs) & long term (5-10 yrs) climate related risks under our CRM.
If the risk impact is >5% of EBITDA (singular impact) or >2.5% of EBITDA (continuous impact), we call this Substantive Financial Impact.

# C2.2c

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

| | Relevance & inclusion | Please explain |
|---|---|---|
| Current regulation | Relevant, always included | 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. As an example, Toros Agri's activities related CO2 and N2O emissions are being externally verified and reported to the Ministry of Environment and Urbanisation as part of the Turkish regulation on Monitoring GHG Emissions (MRV). Any possible changes or additional requirements to be prompted under this regulation is 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 asset level, compliance to legal requirement are also taken into consideration at site specific Environmental Impact Assessment process. |
| Emerging regulation | Relevant, always included | We closely monitor the emerging climate-related regulations. We especially give regard to the emerging potential Emission Trading System (ETS) and/or potential Carbon Taxation mechanism in Turkey. 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) and the ETS Sectors' meeting held in the scope of EU ETS Directive's Regulatory Impact Analysis project. We are considering all methods of carbon pricing mechanisms with a 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 released carbon and calculated our climate-related potential financial impact in case of an emerging carbon pricing mechanism regulation. |

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|---|---|---|
| Technology | Relevant, always included | 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. As an example of managing technology-related risks, we are actively planning on installing a state of the art catalyzer system in our fertilizer operations to reduce our N2O emissions where the great majority, 90% of our gross Scope 1 and 2 GHG emissions occur. 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. In the reporting period, Tekfen Agri's R&D Center located in Adana started its activities to make better use of technology to prevent risks. Tekfen Agri's R&D activities are conducted with the aim of deploying a corporate vision, scientific approach, and financial strength in order to increase the efficiency of agricultural production. |
| Legal | Relevant, always included | Non-compliance with all laws and regulations including climate-related ones causes risk which exposes our Company to litigation. Therefore, legal compliance is paramount to Tekfen Holding and compliance risks are identified as one of the 5 main risk categories assessed in our corporate-wide risk management system. However, there is no risks under this category identified as substantive to date.<br>For example, emerging ETS regulation has legal repercussions and we are actively managing our emissions reporting system. We closely monitor technological applications used at 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 to legal requirement are also taken into consideration at site specific Environmental Impact Assessment process at asset level. |
| Market | Relevant, sometimes included | Sectoral as well as market risks are closely monitored on a Group Company basis. Our three main business areas; Contracting, Agri-Industry and Real Estate Development are among the sectors which are likely to experience climate change impacts the most. In the context of climate change, we prioritize our Agriculture industry as the resulting GHG emissions (mainly N2O process emissions) constitute the great majority (90% of our gross Scope 1 and 2 emissions) of |

| | | |
|---|---|---|
| | | our total GHG emissions. Therefore, N2O emissions from the production of nitric acid are extremely important to us and can present considerable risk to the fertilizer market. This risk is investigated under strategic, operational, compliance and reputational risks. In order to minimize these emissions, we closely monitor technological applications used at the industry to reduce our N2O related GHG emissions. This risk is included and actively monitored in both Toros Agri's and Tekfen Holding's Risk Inventories. |
| Reputation | Relevant, always included | 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. As part of reputational risks, we expect some pressure due to climate-related issues on our companies that can affect our brand image. Our main operations include oil and gas contracting and high N2O emitting fertilizer production and are specifically considered in the context of our reputation. We are aware that climate-related reputational risks are material to us but at the same time, if well manage they create opportunities for us. 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. |
| Acute physical | Relevant, sometimes included | Acute physical risks, especially flooding due to excessive rainfall 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. For example, in the reporting period, there was a hurricane in Antalya, Turkey where our Tekfen Agri has facilities, fortunately not materially affected from the incident. 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 asses them on a case basis as part of plant/ workplace specific emergency response plans. |
| Chronic physical | Relevant, always included | 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; (a) can reduce the demand for Toros Agri's fertilizers and (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. 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. |
| Upstream | Relevant, sometimes included | Upstream climate-related risks are relevant and are considered as part of our multi-disciplinary corporate-wide risk assessment. Upstream risks can include our suppliers as well as business travels and employee commuting as main sources of Scope 3 GHG emissions. Due to the high Global Warming Potential of N2O and its high level of contribution to climate change, the pressure is increasing on both us as an N2O intensive fertilizer producer and the suppliers as raw material producers. In addition, we monitor our electricity purchases, especially in our Building Services operations. In order to better manage and optimize our upstream GHG emissions, we are mindful of the emissions caused by business travel and are using video conferencing actively to reduce unnecessary travel. We also provide employee commuting buses/ minibuses to our employees so that they do not use their personal cars while commuting to work. These upstream risks are fully covered and assessed as part of “Operational Risks” in our Corporate-wide Risks Assessment process. |
| Downstream | Relevant, sometimes included | Due to issues such as chemical fertilizer use, N2O emissions during fertilizer production etc., NGOs and other stakeholders are increasing pressure for less chemical fertilizer use in agricultural activities. Water stress due to climate change is a very important risk for us as it can adversely affect our agricultural activities and reduce the demand for Toros Agri's fertilizers while posing a risk of reduced or lower quality stone fruit production for Tekfen Agri. We are therefore considering environmental issues in all our investments. For example, Tekfen Agri has acquired Alanar Fruit who is one of Turkey’s largest grower of high-quality stone fruit and therefore very much exposed to water stress related risks. In order to secure water availability in all Tekfen Agri owned as well as sub-contracted orchards, analysis are done via humidity sensors and meteorological stations for the appropriate water need of plants. By doing so, optimum amount of water is used and water resources used by downstream users in the same basin are protected. We also consider our waste management activities as part of our climate-related downstream risk management activities and take great care to separate our waste and recycle or reuse our waste to minimize our downstream emissions. |

## C2.2d

**(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.**

Tekfen Holding Strategic Planning and Risk Management Directorate determines the risk model that is going to be utilized in the Corporate Risk Management (CRM) process parallel to ISO 31000 Risk Management Standard. Besides Strategic Planning and Risk Management Directorate, there is also a Risk Committee under the Board of Directors (BoD). Tekfen Holding Strategic Planning and Risk Management Directorate and Risk Committee manage critical risks and opportunities by considering risk-opportunity levels via a risk portfolio approach.
Risks are identified and assessed according to the CRM in stage 1 and 2 respectively. The third stage consists of determination of how to manage the risk (reduction, transfer, abstention, or acceptance). Actions and their costs are determined in the fourth stage by root cause analyses and detailed risk reduction methods/improvement of controls. The tracking of these actions is the fifth step. The responsible owner identified in stage one is responsible for tracking and notifying the Risk Manager in due time.
During 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 top 10 risks. Therefore, Tekfen has chosen “reduction” as risk treatment and opportunity generating option for both climate and water related risks and opportunities.
Climate related risks are identified by Company HSE Managers of Group Companies and reported to each Company’s Risk Committee and Risk Manager. The Company Risk Report, including climate risks, are reported to the Tekfen Holding Strategic Planning and Risk Management Directorate after approval of Company Board. Strategic Planning and Risk 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 bio-gas 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 disposal of 400 tons/day of organic wastes, in addition to the economic value created by the electricity and organic fertilizers produced. The facility thus provides 70,000 tons of CO2 emissions reduction per year.
**Physical risks:** Following the acquisition of 90% of Alanar Fruit’s stakes in the reporting period, Tekfen Agri has become a high-quality stone fruit producer. In the light of recent extreme climate events such as acute rains and hails, both our products’ quality and quantity are under threat. In order to prevent substantive impact due to climate-related acute physical events, we have implemented hail nets in 340 decare of our orchards with a total investment cost of USD 389,000.

**Transitional risks:** There are many transitional risks we face especially due to the geography we operate in. Turkey is going through the EU membership process that brings in potential Emissions Trading Scheme (ETS) regulation and/or additional carbon taxes that pose great risk especially to our N2O emitting fertilizer operations. We contacted the Nitric Acid Climate Action Group (NACAG) for investment options to reduce our N2O emissions. Following extensive feasibility studies, we have identified the right technology which can lower current N2O emissions by 85%. As Toros Agri's BoD have considered efforts to minimize our intensive N2O emissions as the top priority in terms of climate-related transition risk, they have approved an investment budget of over USD 630,000 in order to turn the emissions quota management risk into potentially having further emissions allowance to trade and gain economic advantage.

## C2.3

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

Yes

## C2.3a

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

**Identifier**

Risk 1

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

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Market: Changing customer behavior

**Type of financial impact**

Reduced demand for goods and/or services due to shift in consumer preferences

**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.

**Time horizon**

Long-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)**

140,000,000

**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. This reflects an over USD 1.4 billion 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 shift in energy preference means USD 140 million revenue would be lost at our Contracting Group.

**Management method**

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 renewable energy contracting sector. Our newly established renewable energy department with relevant specializations is seeking opportunities on 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 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 employment of new specialist personnel, memberships, business development activities and outsourced services for proposal. In total, the costs are approximately USD 375,000 annually.

**Cost of management**

787,500

**Comment**

**Identifier**

Risk 2

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

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Reputation: Stigmatization of sector

**Type of financial impact**

Reduced revenue from decreased demand for goods/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 the reporting period, 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 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 increased level of stakeholder pressure towards fertilizer production facilities.

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 related fertilizers, namely Calcium Ammonium Nitrate (CAN) and Ammonium Nitrate (AN).

**Time horizon**

Long-term

**Likelihood**

More likely than not

**Magnitude of impact**

Low

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

1,750,000

**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 17.5 million in 2018. A 10% decrease in sales revenue will result in a decrease in turnover of USD 1.75 million according to 2018 figures.

**Management method**

There are technologies that offer over 80% 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 cost of management (USD 630,000) covers the cost of installing a new catalyser system to reduce N2O emissions. The planned investment was put in the budget and the budget was approved by Toros Agri Board of Directors.

**Cost of management**

630,000

**Comment**

**Identifier**

Risk 3

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

Direct operations

### Risk type

Transition risk

### Primary climate-related risk driver

Policy and legal: Increased pricing of GHG emissions

### Type of financial impact

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

### 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. 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.

Our fertilizer operations in Mersin and Samsun are among the MRV scope and we have CEMS installed.

Turkey has not yet implemented an ETS or a carbon taxation mechanism yet.

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.

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**

Medium

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

4,500,000

**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 average 2018 EU ETS allowance price on secondary market (USD 18.76 per t CO2).
Toros Agri related N2O emissions are in the scope of MRV regulation and can bring on additional liabilities amounting 0.8 million t CO2e.
If an Emissions Trading System is introduced and capped Toros Agri's N2O emissions by 30%, the total potential financial risk would be estimated at around USD 4.5 million (240000 t CO2e * USD 18.76).
Moreover, the potential financial impact is likely to be higher if a carbon taxation mechanism is introduced and our Scope 2 emissions then pose a risk to become a liability as well.

**Management method**

There are technologies that offer around 80- 85% reduction in N2O emitting nitric acid plants. With the technical consultancy provided by the Nitric Acid Climate Action Group's, 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 has been allocated following the approval of Toros Agri Board of Directors.

Moreover, in order to reduce our Scope 2 emissions and increase our renewable energy generation amount, we have approved a budget of USD 1.5 million to invest in 2 solar PV systems to be installed in our Tekfen Agri Adana Agri Park R&D Center and Nevşehir storage facility. These 2 solar PV systems are estimated to produce over 1700 MWh electricity annually. The total cost of management for this risk covers the investment decision approve for these 2 projects.

**Cost of management**

2,130,000

**Comment**

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**Identifier**

Risk 4

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

Direct operations

**Risk type**

Physical risk

**Primary climate-related risk driver**

Acute: Increased severity of extreme weather events such as cyclones and floods

**Type of financial impact**

Reduced revenues from lower sales/output

**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 can expect to see, and in fact are already seeing, 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) As both our Toros Agri and Tekfen Agri companies have operations and warehouses where our products are stored. Acute and severe physical events can damage our products, causing revenue loss together with likely damage to our assets;
(2) Tekfen Agri 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.

**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)**

3,795,500

**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. 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 (USD 66.57 million).

Please note that revenue gained from sales of fertilizers was estimated based on the maximum stock capacity experienced in 2018. Additionally, we calculated a potential (avoided) financial impact of USD 467,000 actual revenue loss (400 tonnes of apricots' sales revenue) which would have been realized if the management method stated (hail net installation to Tekfen Agri orchard) was not implemented.

**Management method**

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 340 decares of land where we produced 400 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.

**Cost of management**

700,000

**Comment**

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**Identifier**

Risk 5

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

Direct operations

**Risk type**

Physical risk

**Primary climate-related risk driver**

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

**Type of financial impact**

Reduced revenue from decreased production capacity (e.g., delayed planning approvals, supply chain interruptions)

### 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 can expect to see, and in fact are already seeing, 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 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.

### 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)

3,040,000

**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 30.4 million in the reporting period and therefore the estimated potential financial impact was calculated as 10% of this sum; slightly over USD 3 million.

**Management method**

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 irrigation system supported by humidity sensors and meteorological stations.
Cost of management realized during the reporting period covers the following actions;
(a) 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 cost of response covers the initial investment as well as the operational cost of the R&D centre in the reporting period (USD 1,239,000).
(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 response is USD 165,000.
(c) Tekfen Agri has installed humidity sensors and meteorological stations to better monitor the plant water needs in cases of chronic mean temperature or climate condition changes, amounting USD 28,000.

**Cost of management**

1,432,000

**Comment**

## C2.4

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

Yes

## C2.4a

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

**Identifier**

Opp1

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

Direct operations

**Opportunity type**

Products and services

**Primary climate-related opportunity driver**

Development and/or expansion of low emission goods and services

**Type of financial impact**

Increased revenue through demand for lower emissions 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 the reporting year, one of the international initiatives, 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 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 90% of our gross Scope 1 & 2 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.
Any efforts we, therefore, make not only helps 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)**

28,062,000

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

56,124,000

**Explanation of financial impact figure**

The stated potential financial impact as a result of defined opportunity is assumed as a minimum %5 and maximum 10% increase in our Agri-Industry revenue due to increasing demand for lower emissions fertilizers. In 2018, Tekfen Holding's Agri-Industry generated a USD 561 million revenue. Therefore, the assumed potential financial impact figure is calculated as USD 56.1 million.

**Strategy to realize opportunity**

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

**Cost to realize opportunity**

630,000

**Comment**

**Identifier**

Opp2

**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

**Type of financial impact**

Increased revenue through new solutions to adaptation needs (e.g., insurance risk transfer products and services)

**Company-specific description**

Our Agri-Industry is prone to multiple climate-related opportunities. As agricultural sector is recognized as one of the most affected sectors from climate change impacts, this creates an opportunity for agricultural product and service providers such as Toros Agri, our fertilizer producing Company, for developing and commercializing new products/solutions with enhanced performance aiming resource preservation. Companies investing in R&D to develop new solutions/products that serves 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. As the producer of one of the main agricultural products, fertilizers, 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)**

28,062,000

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

56,124,000

**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 through development and sales of new fertilizers that help our customers adapt climate-related impacts. In 2018, Tekfen Holding's Agri-Industry generated a USD 561 million revenue. Therefore, the assumed potential financial impact figure is calculated as USD 56.1 million.

**Strategy to realize opportunity**

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. 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). Sales of these specialty fertilizers went up by 49% in 2018. 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 524,000) in the reporting period.

**Cost to realize opportunity**

1,239,000

**Comment**

**Identifier**

Opp3

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

Customer

**Opportunity type**

Products and services

**Primary climate-related opportunity driver**

Shift in consumer preferences

**Type of financial impact**

Better competitive position to reflect shifting consumer preferences, resulting in increased revenues

**Company-specific description**

Conscious use of energy and maximization of renewable energy use is becoming more and more important both economic and environment related perspectives. This poses an opportunity for our real estate business area, who commits to build all new projects according to the most trusted green building standards, LEED, enabling resource efficiency, lower product footprint as well as incorporation of renewable energy sources. This way, Tekfen Real Estate is in a better competitive position to meet the shifting customer expectations towards lower emissions products.

**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)**

48,000,000

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

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

**Explanation of financial impact figure**

The potential impact of this opportunity can be estimated as doubling the annual income gained through sales of LEED certified residential real estate sales over the medium term. As the resulting revenue gained in the reporting period due to sales of LEED certified real estate equals to USD 24 million, the potential financial impact (doubling the revenue) can be estimated as USD 48 million.

**Strategy to realize opportunity**

Tekfen Real Estate is aware of this opportunity for several years now and commits to build all its new projects according to LEED standard. As part of realizing this opportunity, Tekfen Real Estate invests in LEED Certification while making additional investments on developing the project according to the required green building criteria. The cost to realize this opportunity (USD 160,000) includes the investment made to fulfill LEED requirements as well as LEED certification for our most recent project, HEP Istanbul.

**Cost to realize opportunity**

160,000

**Comment**

## C2.5

**(C2.5) Describe where and how the identified risks and opportunities have impacted your business.**

| | Impact | Description |
|---|---|---|

| | | |
|---|---|---|
| Products and services | Impacted | 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 centre has enabled us to create an opportunity. For example, in the reporting period, the specialty fertilizer product 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 2018, with increase in sales by 49% year-on and reaching a total of 29 thousand tons equivalent to an increase in revenue by USD 8.5 million. We consider the magnitude of this impact to be low, however may be subjected to become more material over the medium to long term. |
| Supply chain and/or value chain | Not yet impacted | We have not yet experienced any impacts on our supply and/or value chain. However, farmers use fertilizer products produced by Toros Agri. Climate-related water stress may affect the farmers adversely that can decrease our fertilizer sales. Additionally, Tekfen Agri also purchases stone fruits from its contracted suppliers. For climate change-related disruptions in our supply and/or value chain, we consider a generous 10% reduction in our revenues. Total revenue of Tekfen Agriculture Group including Toros Agri (excluding marine terminal services) and Tekfen Agri was around 460 million USD in 2018. A 10% reduction means approx. 46 million USD in lost revenue that we consider in our financial planning process in the medium to long term (5-10 years). Among these impacts, the projected 10% water stress level increase in Turkey between 2020 and 2030 can be given as one of the main risks. |
| Adaptation and mitigation activities | Impacted | We are aware of our N2O related GHG emission intensive fertilizer production operations require tangible climate-related mitigation activities. In order to transition to a low-carbon (low N2O emissions) operations, we established a Catalyser Project Work Group and initiated feasibility study for N2O reduction in 2017 and 2018. We are also supported by NACAG's (Nitric Acid Climate Action Group) technical know-how for these activities, who may also provide initial investment if this project goes ahead and this is included in our financial planning process. Our N2O related liability is around USD 15.8 million and initial investment cost for the Catalyser project is around USD 630000. This cost has been considered by Toros Agri Board of Directors who approved the necessary investment cost to realize this project. We are planning to install a catalyser, which will enable around 85% of N2O emissions reduction, within short term (up to 1 year). Therefore, we can confidently say that our |

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| | | business strategy has been influenced by and extended to include climate adaptation and mitigation activities. We consider the magnitude of this impact to be low to medium. |
| Investment in R&D | Impacted | 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 center in Turkey. This is a short term impact and the financial impact of around USD 60 million is already realized in our financial planning process. We consider the magnitude of this impact to be medium to high. |
| Operations | Impacted for some suppliers, facilities, or product lines | All impacts of risks and opportunities are considered in the short, medium and long terms (0 to over 10 years) for our operations. For example, we had to install Continuous Emissions Monitoring System (CEMS) in our fertilizer operations as mandated by the Turkish GHG MRV regulation. CEMS installations has cost us approximately USD 55,000 per installation. There is a possibility of going over the temperature limits in seawater due to climate-related impacts. We may need to invest in a new cooling system. There will be costs associated with the recycling and reusing of the phosphogypsum during the rehabilitation of phosphogypsum storage fields.<br>Moreover, we have also established a new operational unit for renewable energy services under Tekfen Construction.<br>Overall, we consider the magnitude of this impact to be low. |
| Other, please specify | | |

## C2.6

**(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.**

| | Relevance | Description |
|---|---|---|
| Revenues | Impacted | 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, in the reporting period, 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 |

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|---|---|---|
| | | have a significant presence in it. The company's operations in this market continued to increase in 2018, with an increase in sales by 49% year-on and reaching a total of 29 thousand tons equivalent to an increase in revenue by USD 8.5 million. We consider the magnitude of this impact to be low, however, may be subjected to become more material over the medium to long term. |
| Operating costs | Impacted | 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. Any increase in water prices will impact our bottom line as such. 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 be subjected to become more material over the medium to long term with expected new requirements to be added to the regulatory requirements. |
| Capital expenditures / capital allocation | Impacted | Capital investment costs are increasing in GHG emissions-intensive production facilities such as our fertilizer production plants operating under Toros Agri. We are planning on installing catalyzer systems that have additional investment and operational costs. We have already invested in CEMS for MRV regulation at USD 55,000 apiece. Our catalyzer system investment, with the aim of drastically reducing our N2O emissions, will have an initial investment of about USD 630,000 already approved by our Board of Directors. Increasing water stress is also going to result in lower limits in effluent released by facilities in order to maintain the available water quality. This results in additional investment in more efficient wastewater treatment systems. We may have to renew or upgrade our wastewater treatment facilities in order to comply with additional requirements or reduced thresholds. We consider the magnitude of impact for capital expenditures/allocation to be medium. |
| Acquisitions and divestments | Impacted | 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 up to 70,000 tons of carbon dioxide per year. Gonen Energy, therefore, performs a highly effective role in the resolution of the area's environmental pollution issues. Overall, we consider the magnitude of this impact to be medium. |

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|---|---|---|
| Access to capital | Not yet impacted | 7 major banks in Turkey have signed the Sustainable Financing Declaration meaning that they will look for environmental and social performance when deciding on loan allocation. In our major projects, financing institutions are actively assessing and evaluating environmental, health & safety issues. Big contracting projects are in scope of Equator Principles (EP) and the importance of environmental-related issues in getting financing is increasing. Therefore we are not yet impacted in terms of climate-related risks and opportunities regarding access to capital, however, we may experience impacts together with increasing investor pressure on sustainable operations over the medium term. |
| Assets | Impacted | Extreme weather events affected some of our assets. For example, a sudden flooding event in Istanbul in previous reporting period adversely affected Tekfen Real Estate Hep Istanbul Project on a magnitude of low. In addition, hail squall events happened in the same year in Istanbul also adversely affected our vehicles and some of the buildings. Moreover, in the reporting period, there was a hurricane in Antalya and hailing in Afyon where our Tekfen Agri owns and operates orchards. Fortunately our assets have not been affected by this incident however, this shows that acute physical climate-related events are likely to have a higher impact on our assets over the medium term, while increasing in magnitude as well. In addition, at the beginning of 2019, another hail squall event happened in Serik/ Antalya and around 250 windows of the greenhouses were broken. Total cost of this incident was around 400 USD. Therefore we can say that the magnitude of this impact is very low, but we may experience higher impacts in the medium to long term. |
| Liabilities | Not yet impacted | A carbon pricing mechanism in Turkey is most likely to be implemented in an ETS form, similar to the EU ETS. Our fertilizer operations are especially liable due to the resulting high N2O emissions. Our liabilities are both potential carbon fees and fines if necessary systems are not implemented and managed properly. We have invested in Continuous Emissions Monitoring Systems to accurately track our N2O emissions. We have also approved an investment in a catalyser system to reduce our N2O emissions and resulting potential liability. Our catalyser system investment will have an initial investment of about USD 630,000. Our potential N2O liability is around USD 15.8 million/year in 2018 emission figures (considering a carbon price of 18.76 USD/tCO2e- the average 2018 EU ETS allowance price on secondary market) in the medium term when considered from a carbon tax standpoint. It could be somewhat lower based on ETS limits. |
| Other | | |

# C3. Business Strategy

## C3.1

**(C3.1) Are climate-related issues integrated into your business strategy?**

Yes

## C3.1a

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

Yes, qualitative

## C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b

**(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b) Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.**

In development, we plan to complete it within the next 2 years

## C3.1c

**(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.**

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.
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 80% 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 up to 70,000 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.

# C3.1d

**(C3.1d) Provide details of your organization's use of climate-related scenario analysis.**

| Climate-related scenarios | Details |
|---|---|
| RCP 4.5 | 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.<br>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 to 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 on special |

| | |
|---|---|
| | fertilizer products that can be used with modern efficient irrigation methods to avoid access use of resources.<br>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, neighbours and other stakeholders, difficulties in accessing enough and good quality water are taken into consideration after the interpretations of the scenario analysis.<br>The scenario analysis have 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.<br>Tekfen Agri is buying new orchards and we asked 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 M&A works we also emphasize climate change related risks and opportunities. 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.<br>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 90% of our gross Scope 1&2 emissions) via an investment approved to install a new catalyser system enabling 85% reduction in N2O emissions which constitute 90% of our gross Scope 1 and 2 emissions.<br>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. |
| Nationally determined contributions (NDCs) | 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 Tekfen, we aim to make 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. One of Tekfen's most pronounced contributions can be listed as:<br>Energy – entering the renewable energy sector as part of our Contracting Group;<br>Industry – made the investment decision to install a new catalyser at Toros Agri Mersin Plant to achieve over 80% reduction in gross Scope 1 & 2 emissions;<br>Buildings and Urban Transformation – Tekfen Real Estate commits to construct buildings with Green Building certification (LEED) such as HEP Istanbul Project;<br>Agriculture – R&D to continuously develop special fertilizers with less environmental impact while extensive training opportunities for |

| | |
|---|---|
| | farmers to adopt sustainable agriculture practices<br>Waste – recent acquisition of Gonen Energy; Turkey's largest integrated biogas and organic fertilizer production plant which operates with zero liquid waste goal, produces renewable electricity as well as organic fertilizer.<br>Forest – our recent acquisition, Alanar Fruit with its orchards, helps us increase the carbon sink areas as well.<br>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. |

# C4. Targets and performance

## C4.1

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

Intensity target

## C4.1b

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

**Target reference number**

Int 1

**Scope**

Scope 1+2 (location-based)

**% emissions in Scope**

90

**Targeted % reduction from base year**

82

**Metric**

Metric tons CO2e per metric ton of product

**Base year**

2018

**Start year**

2018

**Normalized base year emissions covered by target (metric tons CO2e)**

0.55

**Target year**

2023

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

No, and we do not anticipate setting one in the next 2 years

**% of target achieved**

0

**Target status**

New

**Please explain**

The vast majority of our gross Scope 1 & 2 emissions arise as a result of fertilizer production activities held as part of our Agri-Industry business area at 3 production facilities, namely Mersin, Ceyhan and Samsun. In order to have an effective and inclusive emission reduction target, our top priority is to implement an emission reduction target covering the most emissions intensive operations. In this case it is N2O emissions of our Agri-Industry emissions which constitute 90% of our overall Scope 1 & 2 emissions. As N2O has a high Global Warming Potential, our target is considered comprehensive and inclusive.

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

78

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

0

## C4.2

**(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.**

## 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 | 1 | |
| To be implemented* | 4 | 733,241 |
| Implementation commenced* | 0 | 0 |
| Implemented* | 3 | 231.84 |
| 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 type**

Energy efficiency: Building services

**Description of initiative**

Lighting

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

70.29

**Scope**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

11,361

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

146,418

**Payback period**

11-15 years

**Estimated lifetime of the initiative**

11-15 years

**Comment**

Old and less efficient lighting equipment amounting 39,060 watt was replaced with 4,312 watt more efficient LED lighting fixtures resulting in an annual electricity savings of 140 MWh in our Tekfen Tower building, hosting the HQ of Tekfen Construction, Toros Agri, Tekfen Manufacturing, Tekfen Tourism and Tekfen Insurance. At the time of the implementation, the electricity unit price was lower. With gradually increasing unit price, the payback period of the initiative will be in less than 10 years. However, the realized annual monetary savings was taken into account while responding to this question.

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**Initiative type**

Energy efficiency: Building services

**Description of initiative**

HVAC

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

130.14

**Scope**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

28,025

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

1,473

**Payback period**

<1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

In Tekfen Tower, HQ of Tekfen Construction, Toros Agri, Tekfen Manufacturing, Tekfen Tourism and Tekfen Insurance, the HVAC system was optimized to work based on required load rather than previously working on a base load which resulted in unnecessary electricity consumption. With a considerably low investment to enable the existing system to adjust its working load based on requirements of the tenants off working hours, we enabled an approximately 259 MWh electricity efficiency in the reporting period.

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**Initiative type**

Low-carbon energy installation

**Description of initiative**

Solar PV

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

31.41

**Scope**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

1,971

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

12,690

**Payback period**

4 - 10 years

**Estimated lifetime of the initiative**

11-15 years

**Comment**

Implementation of Solar PV system on both Social Club and Hotel area as part of Toros Agri Ceyhan Facility, annual renewable electricity generation of 62.5 MWh is realized.

# 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, the third party companies verify our fertilizer plants' GHG emissions and report to Ministry of Environment and Urbanization. Therefore, 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 have 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**

Product

**Description of product/Group of products**

LEED Certified Buildings/Plants, Projects

**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

LEED Certification Standard

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

1

**Comment**

Tekfen Real Estate Hep İstanbul project is a LEED certified housing project which has received the first place in International Sustainable Buildings Symposium (ISBS) 2019 Sustainable Residential Building category. This project is projected to result in 20% savings in water

consumption, 50% savings in irrigation, 20% savings electricity and 25% savings in natural gas by designing lighting and HVAC systems to maximize energy performance, selecting proper insulating glass windows, green roofing, and bicycle parking areas. All these savings mean that residents are able to avoid unnecessary emissions. In addition, the construction process is also sustainable and low-carbon. All construction waste is recycled and defining structures are sourced locally with specific recycled input material ratios.
Tekfen Holding Group Companies are actively seeking to increase the revenue gained from low-carbon products as the company always implements new projects under the most feasible Green Building criteria (e.g. Archive Building of Tekfen Construction in Ceyhan, Al Thumama Stadium Project of Tekfen Construction in Qatar, Fruit Handling Plant of Tekfen Agri in Manisa).

# 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, 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 Scope 1 and Scope 2 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)**

899,827.97

**Start date**

January 1, 2018

**End date**

December 31, 2018

**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**

38,820.94

**Start date**

January 1, 2018

**End date**

December 31, 2018

**Comment**

We only report location-based Scope 2 emissions.

## 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 Scope 3 emissions, disclosing and explaining any exclusions.

### Purchased goods and services

#### Evaluation status

Relevant, calculated

#### Metric tonnes CO2e

26,696.05

#### Emissions calculation methodology

Activity data: Energy consumption activities of our subcontractors in Tekfen Construction sites are monitored as part of overall operations. Emission Factors: IPCC emission factors stationary combustion default fuel emission factors were used for fuels, Turkish Grid electricity emission factor was calculated with Turkish Electricity Transmission Corporation's (TEIAS) official data according to CDM Tool 07 and waste emissions factor according to treatment method were taken from DEFRA 2018 conversion factors. Global Warming potentials were taken from IPCC AR4 100-year time horizon. 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

68

#### Explanation

As part of services purchased from our subcontractors under Tekfen Construction operations, we calculated the Scope 3 emissions arising from our subcontractors’ energy consumption as well as waste generation in Tekfen Construction project locations.

### Capital goods

#### Evaluation status

Not relevant, explanation provided

### Explanation

Scope 3 emissions from purchased capital goods are not relevant in our operations. Until now, we haven't assessed our capital goods related Scope 3 emissions to be relevant. However, they will be considered if annual capital goods increase considerably from one year to the next.

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

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

12,112.11

### Emissions calculation methodology

Activity data as fuel consumed as a result of our operations are tracked in relevant units (m3, kWh, lt and ton). We apply DEFRA's up to date (2018) well-to-tank (WTT)-fuel emission factors for Scope 3 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

### Explanation

## Upstream transportation and distribution

### Evaluation status

Not relevant, explanation provided

### Explanation

Scope 3 emissions from upstream transportation and distribution are not currently relevant in our operations. Until now, we haven't assessed our upstream transportation related Scope 3 emissions to be relevant. However, they will be considered if annual transportation volume increases considerably from one year to the next.

## Waste generated in operations

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

1,730.65

### Emissions calculation methodology

Activity data as waste generated as a result of our operations are tracked in tonnes. We apply DEFRA's up to date (2018) waste emission factors for Scope 3 calculations taken from 2018 conversion factors. 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

2

### Explanation

## Business travel

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

2,703.02

### Emissions calculation methodology

We obtain flight information from our travel agency. We then use International Civil Aviation Organisation (ICAO) website to calculate flight distance and apply DEFRA's up to date (2018) business travel air emission factors. 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

### Explanation

This category includes business flight data of Tekfen employees.

## Employee commuting

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

1,359.18

### Emissions calculation methodology

We obtain employee commuting distance information from our service providers as activity data. We then apply DEFRA's up to date (2018) road travel emission factors. 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

### Explanation

## Upstream leased assets

### Evaluation status

Not relevant, explanation provided

### Explanation

Scope 3 emissions from upstream leased assets are not relevant to our operations. Until now, we haven't assessed our upstream leased assets related Scope 3 emissions to be relevant. However, they will be considered if annual leased upstream assets increased considerably from one year to the next.

## Downstream transportation and distribution

### Evaluation status

Not relevant, explanation provided

### Explanation

Our operations do not include downstream transportation and distribution activities. Therefore, this category is not included in our Scope 3 inventory yet. However, if a significant change occurs in our downstream operations, this assessment will be revisited.

## Processing of sold products

### Evaluation status

Not relevant, explanation provided

### Explanation

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

## Use of sold products

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

38,595.64

### Emissions calculation methodology

As activity data we obtain a database of our sold products from our petrol stations and organized industrial zone. We apply IPCC default fuel emission factors and DEFRA 2018 conversion factors for calculating Scope 3 emissions under this category. 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

### Explanation

## End of life treatment of sold products

### Evaluation status

Not relevant, explanation provided

### Explanation

End of life treatment of our sold products are not relevant to our operations. As our main sold products

## Downstream leased assets

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

137,084.57

### Emissions calculation methodology

We obtain electricity consumption information from our leases as activity data and apply Turkey's average grid emission factor calculated by using  (TEIAS' most recent official electricity generation data according to CDM Tool 07. 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

### Explanation

## Franchises

### Evaluation status

Not relevant, explanation provided

### Explanation

Our operations do not involve any franchises. Therefore, we do not have an emission source under this category.

## Investments

### Evaluation status

Not relevant, explanation provided

### Explanation

Emissions from investments are not relevant. As 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

### Explanation

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

## Other (downstream)

### Evaluation status

Not relevant, explanation provided

### Explanation

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

# C6.7

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

No

# C6.10

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

**Intensity figure**

0.0004065

**Metric numerator (Gross global combined Scope 1 and 2 emissions)**

938,648.9

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

2,308,953.03

**Scope 2 figure used**

Location-based

**% change from previous year**

3.51

**Direction of change**

Decreased

### Reason for change

The reason for the stated 3.51% decrease in our gross Scope 1 and 2 emissions have two factors;
1. Our gross scope 1 and scope 2 emissions in 2018 have increased by 12.24 %, on the other hand, total revenue in 2018 has increased by 16.32%
2. The emissions reduction initiatives implemented in the reporting period such as energy efficiency in building services as well as implementing renewable energy (solar PV) in our Toros Agri Ceyhan operations. A total of 231.84 t CO2 emissions were avoided/reduced as a result of these reduction initiatives implemented during the reporting period. Resulting in a 0.02% decrease from the previous reporting period gross Scope 1 & 2 emissions.

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### Intensity figure

48.94

### Metric numerator (Gross global combined Scope 1 and 2 emissions)

938,648.9

### Metric denominator

full time equivalent (FTE) employee

### Metric denominator: Unit total

19,180

### Scope 2 figure used

Location-based

### % change from previous year

7.07

### Direction of change

Increased

**Reason for change**

The increase resulted from a 12.24% increase in our gross Scope 1 and 2 emissions which surpassed the 4.83% increase in total number of our full-time employees in 2018. However, taking our N2O intensive process emissions from our fertilizer production activities out of the equation, our gross Scope 1 & 2 emissions intensity per employee has decreased by 68%.

# 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 | 51,426.71 | IPCC Fourth Assessment Report (AR4 - 100 year) |
| N2O | 846,465.13 | IPCC Fourth Assessment Report (AR4 - 100 year) |
| CH4 | 55.09 | IPCC Fourth Assessment Report (AR4 - 100 year) |
| HFCs | 1,881.04 | 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 | 899,827.97 |

# 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 | 29,795.98 |
| Agri-Industry | 869,757.92 |
| Real Estate Development | 210.37 |
| Other Activities | 63.7 |

# 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 | 861,777.77 | |

# C7.5

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

| Country/Region | Scope 2, location-based (metric tons CO2e) | Scope 2, market-based (metric tons CO2e) | Purchased and consumed electricity, heat, steam or cooling (MWh) | Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh) |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Turkey | 38,820.94 | | 77,320.94 | 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 emissions (metric tons CO2e) | Scope 2, market-based emissions (metric tons CO2e) |
|---|---|---|
| Contracting | 10,639.27 | |
| Agri-Industry | 27,552.51 | |
| Real Estate Development | 178.41 | |
| Other Activities | 450.75 | |

## 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 | 22,775.2 | | 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 tCO2e from purchased feedstock | Explain calculation methodology |
|---|---|---|

## C-CH7.8a

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

| | Sales, metric tons | Comment |
|---|---|---|
| Carbon dioxide (CO2) | 0 | We do not sell products that are greenhouse gasses. |
| Methane (CH4) | 0 | We do not sell products that are greenhouse gasses. |
| Nitrous oxide (N2O) | 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 | 6,486.11 | Decreased | 0.78 | Toros Agri Samsun and Mersin Plants recover waste heat to produce electricity in Steam Turbine Generator unit. By doing so, the plants have produced 10.04% more electricity via this non-fossil renewable source amounting a total of 142194.14 MWh in 2018 compared to 129275.54 MWh in 2017 (12918.6 MWh more electricity was produced in 2018). If this electricity was supplied from the grid, the additional emissions created would have been the MWh to be purchased multiplied by the grid electricity emission factor (12918.6*0,502 t CO2 = 6.486.11 t CO2). The calculated emissions reduction due to renewable energy consumption is represents a change of 0.78% in gross Scope 1 and 2 emissions (6486.11 / 836298.22 (2017 Scope 1 and 2 GHG Emissions) * 100 = 0.78%). |
| Other emissions reduction activities | 231.83 | Decreased | 0.02 | Our 2017 Scope 1+Scope 2 emissions were 836298.22 tCO2e. In 2018, we have implemented 3 emissions reduction initiatives, resulting in a total of 231.83 t CO2e reduction. The decrease percentage was calculated as follows: 231.83 / 836298.22 * 100 = 0.02%). |
| Divestment | 0 | No change | | |
| Acquisitions | 5,205 | Increased | 0.6 | This increase resulted from the recently acquired services as part of Tekfen Agriculture Company; Alanar Fruit. This emission source is a new addition to our emissions boundary. Gross Scope 1 and 2 emissions arising from Tekfen Agri's 2018 operations were 5,205 t CO2e. The stated emissions change percentage was calculated as 5205 / 836298.22 (2017 gross Scope 1&2 emissions) * 100 = 0.6%. |
| Mergers | 0 | No change | | |
| Change in output | 97,145.68 | Increased | 11.62 | This increase was calculated as the sole increase in 2017 boundary emissions due to increased production and capacity increase in our Toros Agri fertilizer producing |

| | | | | |
|---|---|---|---|---|
| | | | | plants (4% increase in Mersin Plant and 7.5% increase in Samsun Plant Production volumes). Taking the acquisition related emissions increase (5205 t CO2e) out of the equation, there is still a 97145.68 tCO2e increase in emissions due to the above-mentioned production increase. The increase percentage was calculated as 97145.68 t CO2e / 836298.22 t CO2e (2017 gross Scope 1&2 figure) * 100 = 11.62%. |
| Change in methodology | 0 | No change | | |
| Change in boundary | 0 | No change | | |
| Change in physical operating conditions | 0 | No change | | |
| Unidentified | 0 | No change | | |
| 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 undertakes this energy-related activity |
|---|---|
| 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 MWh |
|---|---|---|---|---|
| Consumption of fuel (excluding feedstock) | LHV (lower heating value) | 0 | 213,986.82 | 213,986.82 |
| Consumption of purchased or acquired electricity | | 0 | 77,320.94 | 77,320.94 |
| Consumption of self-generated non-fuel renewable energy | | 142,256.69 | | 142,256.69 |
| Total energy consumption | | 142,256.69 | 291,307.77 | 433,564.46 |

# 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) | 77,340.15 |
| Consumption of purchased or acquired electricity | | 45,362.13 |
| Consumption of self-generated non-fuel renewable energy | | 142,194.14 |
| Total energy consumption | | 264,896.42 |

# 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**

48,785.15

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

0

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

48,785.15

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

0

**Comment**

---

**Fuels (excluding feedstocks)**

Coal

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

17.44

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

0

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

17.44

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

0

**Comment**

**Fuels (excluding feedstocks)**

Fuel Oil Number 1

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

193.04

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

0

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

193.04

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

0

**Comment**

**Fuels (excluding feedstocks)**

Liquefied Petroleum Gas (LPG)

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

4,505.67

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

0

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

4,505.67

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

0

**Comment**

---

**Fuels (excluding feedstocks)**

Diesel

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

116,169.57

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

32,966.54

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

83,203.04

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

0

**Comment**

---

**Fuels (excluding feedstocks)**

Motor Gasoline

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

1,065.51

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

0

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

1,065.51

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

0

**Comment**

**Fuels (excluding feedstocks)**

Liquefied Natural Gas (LNG)

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

43,250.44

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

0

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

10,732.88

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

32,517.56

**Comment**

## C8.2d

**(C8.2d) List the average emission factors of the fuels reported in C8.2c.**

**Coal**

**Emission factor**

1.27422

**Unit**

metric tons CO2e per metric ton

**Emission factor source**

IPCC Chapter 2 Stationary Combustion (Table 2.2)

**Comment**

## Diesel

**Emission factor**

0.00265

**Unit**

metric tons CO2e per liter

**Emission 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 (0.002634 metric tons CO2e per liter) and Stationary diesel emissions factors (0.00267 metric tons CO2e per liter)

## Fuel Oil Number 1

**Emission factor**

0.00317

**Unit**

metric tons CO2e per liter

**Emission factor source**

DEFRA 2018 Conversion Factors - FUELS Fuel Oil

**Comment**

## Liquefied Natural Gas (LNG)

**Emission factor**

2.7466

**Unit**

metric tons CO2e per metric ton

**Emission factor source**

DEFRA 2018 Conversion Factors – FUELS LNG

**Comment**

## Liquefied Petroleum Gas (LPG)

**Emission factor**

2.8814

**Unit**

metric tons CO2e per metric ton

**Emission factor source**

IPCC Chapter 2 Stationary Combustion (Table 2.2)

**Comment**

## Motor Gasoline

**Emission factor**

0.00227

**Unit**

metric tons CO2e per liter

**Emission factor source**

IPCC Chapter 3 Mobile Combustion (Table 3.2.1 &3.2.2)

**Comment**

### Natural Gas

**Emission factor**

0.00193

**Unit**

metric tons CO2e per m3

**Emission factor source**

IPCC Chapter 2 Stationary Combustion (Table 2.2)

**Comment**

## C8.2e

**(C8.2e) 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 | 254,259.09 | 175,223.23 | 221,292.55 | 142,256.69 |
| Heat | 148,502.72 | 148,502.72 | 0 | 0 |
| Steam | 32,517.57 | 32,517.57 | 0 | 0 |
| Cooling | 0 | 0 | 0 | 0 |

## C-CH8.2e

**(C-CH8.2e) 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 | 221,230 | 142,194 |
| Heat | 44,822.58 | 44,822.58 |
| Steam | 32,517.57 | 32,517.57 |
| Cooling | 0 | 0 |

## C8.2f

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

**Basis for applying a low-carbon emission factor**

No purchases or generation of low-carbon electricity, heat, steam or cooling accounted with a low-carbon emission factor

**Low-carbon technology type**

**Region of consumption of low-carbon electricity, heat, steam or cooling**

**MWh consumed associated with low-carbon electricity, heat, steam or cooling**

**Emission factor (in units of metric tons CO2e per MWh)**

**Comment**

## C-CH8.3

**(C-CH8.3) Disclose details on your organization's consumption of feedstocks for chemical production activities.**

**Feedstocks**

No consumption of fossil fuel feedstocks for chemical production activities

**Total consumption**

**Total consumption unit**

**Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit**

**Heating value of feedstock, MWh per consumption unit**

**Heating value**

**Comment**

## C-CH8.3a

**(C-CH8.3a) State the percentage, by mass, of primary resource from which your chemical feedstocks derive.**

| | Percentage of total chemical feedstock (%) |
|---|---|
| Oil | |
| Natural Gas | |
| Coal | |
| Biomass | |
| Waste | |
| Fossil fuel (where coal, gas, oil cannot be distinguished) | |
| Unknown source or unable to disaggregate | |

# C9. Additional metrics

## C9.1

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

**Description**

Energy usage

**Metric value**

433,564.46

**Metric numerator**

Total energy consumption in MWh

**Metric denominator (intensity metric only)**

**% change from previous year**

13

**Direction of change**

Decreased

**Please explain**

Total energy consumption was 496,119.66 MWh in 2017.

## C-CH9.3a

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

## C-CH9.6

**(C-CH9.6) Disclose your organization's low-carbon investments for chemical production activities.**

# 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 and/or Scope 2 emissions and attach the relevant statements.**

**Scope**

Scope 1

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Reasonable assurance

### Attach the statement

Tekfen_Mersin_2018 Scope 1 Verification_CDP template.pdf

Mersin_2018 GHG Verification Report.pdf

### Page/ section reference

Please refer to the attached verification letter. You can also refer to whole Mersin Plant's GHG Emission Verification Report which was submitted to the Ministry of Environment and Urbanization.

### Relevant standard

ISO14064-3

### Proportion of reported emissions verified (%)

94

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### Scope

Scope 1

### 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

Ceyhan_2018 GHG Verification Report.pdf

Tekfen_Ceyhan_2018 Scope 1 Verification_CDP template.pdf

**Page/ section reference**

Please refer to the attached verification letter. You can also refer to whole Ceyhan Plant's GHG Emission Verification Report which was submitted to the Ministry of Environment and Urbanization.

**Relevant standard**

ISO14064-3

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

1

---

**Scope**

Scope 1

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Reasonable assurance

**Attach the statement**

Tekfen_Samsun_2018 Scope 1 Verification_CDP template.pdf

Samsun_2018 GHG Verification Report.pdf

**Page/ section reference**

Please refer to the attached verification letter. You can also refer to whole Samsun Plant's GHG Emission Verification Report which was submitted to the Ministry of Environment and Urbanization.

**Relevant standard**

ISO14064-3

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

1

---

**Scope**

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**

Toros Agri_Mersin_Scope 2 Verification Statement.pdf

Toros Agri_Mersin_Scope 2 Verification Letter_CDP Template.pdf

**Page/ section reference**

Please refer to page 1 of the attached Verification Statement and page 1 and 2 on the Scope 2 Verification letter for Mersin Plant.

**Relevant standard**

ISO14064-3

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

11

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**Scope**

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**

Toros Agri_Ceyhan_Scope 2 Verification Statement.pdf

Toros Agri_Ceyhan_Scope 2 Verification Letter_CDP Template.pdf

**Page/ section reference**

Please refer to page 1 of the attached Verification Statement and page 1 and 2 on the Scope 2 Verification letter for Ceyhan Plant.

**Relevant standard**

ISO14064-3

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

30

**Scope**

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**

Toros Agri_Samsun_Scope 2 Verification Statement.pdf

Toros Agri_Samsun_Scope 2 Verification Letter_CDP Template.pdf

**Page/ section reference**

Please refer to page 1 of the attached Verification Statement and page 1 and 2 on the Scope 2 Verification letter for Samsun Plant.

**Relevant standard**

ISO14064-3

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

14

## 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 in which you participate or anticipate participating?**

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. However, Turkey is in the process of deciding on the appropriate carbon pricing mechanism and carbon tax is also one of the options that's considered. 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 significantly. Our fertilizer operations are the only possible operations in scope and reduction possibilities are around 85%.

## 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)**

18.76

**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**

Assuming a 30% reduction as part of a potential Emissions Trading System introduced as part of our MRV related emissions, then the amount of our total annual N2O related liability is approximately USD 4.5 million due to the N2O emissions arising from fertilizer operations. Using a 18.76 USD/tCO2e EU ETS market price for allowances in 2018, 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 has been analysed and the Board has approved a USD 630,000 investment in a new catalyser 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

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

25.1

**% Scope 3 emissions as reported in C6.5**

0

**Rationale for the coverage of your engagement**

This engagement activity covers our Tekfen Construction operations who works with many suppliers (such as steel producers) and at the beginning of each project, depending on the geography, size and the nature of the project, 10 to 15 products with highest potential environmental impact are identified with the initiative of the Project' HSE Manager. As part of the projects that were active during the reporting period, this evaluation resulted in identification of 41 suppliers who provide the identified highest impact materials/services. In order to monitor the environmental impact of those suppliers, a life cycle checklist, including various topics from energy and raw material usage, renewable resource inclusion, Environmental Management System or standard in place, raw material/energy efficiency measures implemented etc., has been shared with all of them to better comprehend our wider environmental footprint and inform our critical suppliers on our efforts to effectively manage our climate change impacts.

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

We have initiated this engagement in the previous reporting period with the aim of collecting environmental related information from our strategic -at the same time with high environmental impact owning- suppliers. By doing so we believe that not only we will be able to show the importance we place on environmental performance such as compliance with regulations, responsible consumption of all resources, renewable energy and material deployment and managing operations under Environmental Management System (EMS), but also we would like to increase awareness of our strategic suppliers and potentially help us reduce our environmental impact, including climate-related parameters, on the most important part of our value chain. In the reporting period, our HSE Project Managers have identified 41 strategic suppliers 28 of which have fully completed our Project Life Cycle Checklist Form (GM-SEC-FRM-017). We consider this progress, 68.3% response rate (above an expected 50%), a success and aim to increase this rate in the medium horizon.

**Comment**

Under the scope of Environmental Management System in parallel to ISO 14001 Standard, we have started to examine Life Cycle Assessment of the raw materials used. We have started to use "cradle to cradle" approach instead of "cradle to grave" for the raw materials and relevant wastes.

# C12.1b

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

### Type of engagement

Education/information sharing

### Details of engagement

Share information about your products and relevant certification schemes (i.e. Energy STAR)

### % of customers by number

89

### % Scope 3 emissions as reported in C6.5

0

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

Our HEP Istanbul housing project is LEED certified. We have conducted numerous target and strategy identification meetings with all project stakeholders during the projects and communicate the benefits and importance of living in a LEED Certified building to all our buying customers.

### Impact of engagement, including measures of success

We have achieved more than 20% efficiency in water use in our project. We also achieved about 50% reduction in irrigation with a selection of local and less water absorbent plants. Energy efficient mechano-electrical systems and efficient glass panels resulted in 20% reduction in energy consumption. We consider this a success and a decent contribution to our efforts to enhance climate change management activities. We communicated these outcomes with all our buying customers from this project. To date, we have sold 89% of the residences available in the

HEP Istanbul Project. And we consider this awareness raising communication an important step to share our efforts on climate change management with our key stakeholders, especially our 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**

7.3

**% Scope 3 emissions as reported in C6.5**

0

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

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 produce in agricultural production through increasing awareness resulting 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 1980’s, when the company started its operations, to increase quality and hence contribute to farmer’s wealth and protect the environment. In the fertilizer sector, farmer-training seminars, first and solely applied by Toros Agri, are organized throughout Turkey, in countless cities and districts, and open to everyone. In addition to the seminars, thanks to meetings at village cafes and TV programs, Toros Agri has reached over hundred thousands of farmers until today. Toros Agri is in close cooperation with regional agricultural organizations in relation to this matter. We also have our TOROS FARMER APP that shares educational information and recommendations about fertilizers with our registered farmers and distributors. With this APP we aim to contribute to Sustainable Development Goals (SDGs) 2, 4, 12 and 13. We believe that by increasing the efficiency of our farmers using our fertilizers, we can reduce the related energy and water consumption. 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.

### Impact of engagement, including measures of success

We have reached 7.3% of all wheat fields in the country through our TOROS FARMER APP (Toros Farmers App) that shares educational information with 7000 farmers, 7500 farms and 800 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 same area).

## C12.1c

### (C12.1c) 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.

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

Initiatives: During the reporting period, together with our preparation of first GRI Sustainability Report, we have taken another step towards enhancing our sustainability initiatives by joining 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. In the reporting period, we provided support while compiling and communicating the Guide on the Principles of Sustainable Agriculture and Best Practices. We are also the founding member of Turkish Industry and Business Association (TUSIAD) which are in the forefront when it comes raising awareness and working with policy makers on climate change related issues as well as a broad range of environmental issues such as zero waste in Turkey.

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 have started a collaboration with Istanbul Technical University, one of the leading technical universities in Turkey, on a carbon capture project as part of the national Scientific and Technological Research Council of Turkey

(TUBITAK) Support Project 1003 on Primary Subjects R&D Projects. 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. The winners have not been announced yet but until now Tekfen has contributed to the project with 2 of its experts on the topic. 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 90% of our gross Scope 1&2 emissions.
International Collaborations: As part of the Horizon 2020 Framework Programme for R&D from European Commission, Tekfen Agri is one of 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.

# 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 | 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 contractors including our Group Company Tekfen Construction. | Turkish Regulation on Energy Efficiency |
| 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. | Turkish Regulation on Monitoring GHG Emissions |

# 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 2018.pdf

**Page/Section reference**

100 -101

**Content elements**

Governance
Strategy
Risks & opportunities

Emissions figures
Other metrics

**Comment**

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**Publication**
In voluntary sustainability report

**Status**
Complete

**Attach the document**

TEKFEN HOLDING Sustainability Report 2018.pdf

**Page/Section reference**
32-35 & 76

**Content elements**
Governance
Strategy
Risks & opportunities
Emissions figures
Other metrics

**Comment**

# C14. 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.**

## C14.1

**(C14.1) 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**

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

**Please confirm below**

I have read and accept the applicable Terms