

Welcome to your CDP Climate Change Questionnaire 2022

C0. Introduction

C0.1

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

Akçansa, a JV of Sabancı Holding and HeidelbergCement, is the leader of Turkish Cement industry. Operating in the Marmara, Aegean, and Black Sea regions, Akçansa produces cement and clinker in its three integrated cement production facilities located in Istanbul-Büyükçekmece, Çanakkale, and Samsun-Ladik. Company also has two ports and five cement terminals located in Istanbul-Ambarlı, İzmir-Aliağa, Yalova, Trabzon and Marmara Ereğlisi. Additionally, company has ready-mixed concrete operations under “Betonsa” brand at 26 facilities and aggregates operations under “Agregasa” brand in 2 facilities. Akçansa aims to be “the highest quality in production and service” in order to meet the demands of both its domestic and international customers and to compete beyond the price.

Akçansa, meets 7% of Turkey’s cement need as well as 12% of Turkey’s total cement and clinker export with its products complying to the global quality standards, its eco-friendly identity awarded by the Istanbul Chamber of Industry, its innovative sustainable products, its outstanding service understanding, and its plants equipped with high technology.

Akçansa’s vision statement “Sustainable growth beyond all limits” reflects Company’s Business Strategy that is formed by accepting sustainability as an integral part of its business model and one of its core enablers. The sustainability journey dates back to 2009 when Sustainability Committee was established, and 2020 Sustainability Ambitions were set. The sustainability vision is maintained by the Company’s mission as well which is “to be a leading building materials company” enhancing the quality of life of the society by means of our culture committed to environmental, legal and ethical principles.

Akçansa’s climate change strategy mainly focuses on reduction of CO2 emissions through maximizing alternative fuels and biomass, decreasing rate of clinker in cement and concrete , increasing energy efficiency and renewable energy use. Akçansa adopts a sustainability management approach as the main element of its corporate vision, covering all business processes from raw material production to after-sales services to end-users. Akçansa is participatory of the UN Global Compact, UN Women’s Empowerment Principles, CDP Climate Change/Water programs and a member of WBCSD Turkey.

Akçansa set 2030 sustainability targets in 2020. In 2021, Sustainability Department was established. In the new sustainability management structure, the sustainability strategy and performance are embraced at the level of the Board of Directors (BoD). The BoD defines,

approves and reviews the sustainability vision and strategy, policies, risks and opportunities of the company in line with the sustainability priorities. All activities related to sustainability are overseen by the Corporate Governance Committee (CGC) with the authorization of the BoD. Sustainability Committee (SC) takes the key position to set targets and to develop projects. SC is chaired by Deputy General Managers (DGM) of Operations and Human Resources Functions who directly report to General Manager (GM). Committee Members are heads of Akçansa's 6 sustainability pillars. Working Groups (WGs), reporting to SC, develop and implement projects to reach sustainability targets. SC reports to Sustainability Steering Committee (SSC) which consists of Akçansa Executive Committee Members (GM and DGMs) and a dedicated Board Member who is also a member of CGC. SSC's main mission is to approve and follow up sustainability targets & projects. SSC reports to BoD. In BoD, Chair represents Sabancı Holding and Vice President represents HeidelbergCement. Akçansa GM shares key sustainability KPIs and relevant ongoing projects to BoD regularly. From setting up of sustainability strategy to follow up targets and approval of investment budgets, SSC, CGC and BoD directly own the whole process. The climate-related targets (alternative fuel rate and energy KPIs) are defined by DGM-Operations together with Plant Managers and Sustainability Manager (SM), who are direct reports of DGM-Operations. SM is also responsible from coordination of all corporate sustainability and climate activities, internal and external communication of ESG issues. Environmental Executive (EE) who is also direct report to DGM-Operations plays a key role in implementation of climate actions. Environmental engineers at production plants are direct reports to EE and responsible of 14001 EMS management, compliance to regulations, CO2 emissions follow-up/calculations/reporting. Targets are extended to relevant employee by annual personal performance targets. Also, climate-related targets are among company targets. CO2 emissions (total of 3 facilities) are reported annually to Ministry of Environment, Urbanization and Climate change as well as HeidelbergCement. CO2 calculations are based on "WBCSD Cement Sustainability Initiative Cement CO2 and Energy Protocol, Version 3.1 CO2 Emissions and Energy Inventory".

C0.2

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

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Reporting year	January 1, 2021	December 31, 2021	No

C0.3

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

Turkey

C0.4

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

TRY

C0.5

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

Operational control

C-CE0.7

(C-CE0.7) Which part of the concrete value chain does your organization operate in?

- Limestone quarrying
- Clinker production
- Portland cement manufacturing
- Blended cement
- Alternative 'low CO2' cementitious materials production
- Aggregates production
- Concrete production

C0.8

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

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, a Ticker symbol	AKCNS

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	Board of Directors are the highest-level individuals with direct responsibility for all sustainability and climate-related issues such as but not limited to climate strategy, mitigation actions, policies, risks and opportunities. Board Chair is representing Sabancı Holding as President of Building Materials Business Unit. He is informed

	regularly by Akçansa CEO (General Manager) on behalf of the Sustainability Steering Committee in Akçansa Board Meetings. Chair's responsibility is to approve sustainability vision, strategy and targets. Akçansa's sustainability strategy and the most recent Akçansa 2030 Sustainability Targets including the climate-related targets were approved by the Chair as well as the sustainability governance structure. Akçansa's 2030 target is to reduce specific net CO2 emissions to 649 kg per ton of cementitious material. Board Chair is also informed by Sustainability Manager to review and oversee the sustainability progress and climate related actions monthly or more often if needed.
Other, please specify Vice Chair	Board of Directors are the highest-level individuals with direct responsibility for all environmental sustainability and climate-related issues such as but not limited to climate strategy, mitigation actions, policies, risks and opportunities. Vice President is representing HeidelbergCement as Vorstand Member responsible from CEO Africa & East Mediterranean. He is informed regularly by Akçansa CEO on behalf of the Sustainability Steering Committee in Akçansa Board Meetings. His responsibility is to define sustainability vision, strategy, risks and opportunities, approving policies and frameworks. Akçansa's sustainability strategy and the most recent Akçansa 2030 Sustainability Targets including the climate-related targets were approved by the Vice Chair as well as the sustainability governance structure. Akçansa's 2030 target is to reduce specific net CO2 emissions to 649 kg per ton of cementitious material. He is also informed by Sustainability Manager to review and oversee the sustainability progress and climate related actions monthly or more often if needed.
Director on board	Board of Directors are the highest-level individuals with direct responsibility for all environmental sustainability and climate-related issues such as but not limited to climate strategy, mitigation actions, policies, risks and opportunities. Board Members other than the Chair and Vice President have the responsibility to oversee the sustainability related operations in addition to discuss, propose, monitor and inspect sustainability vision and strategy. Akçansa's sustainability strategy and the most recent Akçansa 2030 Sustainability Targets including the climate-related targets were approved by the Directors on the Board as well as the sustainability governance structure. Akçansa's 2030 target is to reduce specific net CO2 emissions to 649 kg per ton of cementitious material. One of the Board members is the Chair of Early Risk Identification Committee which evaluates climate-related risks as well. Moreover, another Board Member is Chair of Corporate Governance Committee that has the responsibility to track the progress on sustainability targets, climate-related operations, implementation of climate and sustainability related projects throughout the value chain. He is informed by Sustainability Manager to review the sustainability progress and climate related actions quarterly via Corporate Governance Committee meetings or more often if needed. He is also a member of Sustainability Steering Committee.
Board-level committee	Corporate Governance Committee (CGC) is authorized by the Board of Directors. It oversees the work of the Sustainability Steering Committee, which operates in line with the sustainability strategy, which includes the priority sustainability issues, risks and opportunities determined and approved by the Board of Directors, and the

	<p>policies established and approved accordingly. CGC Evaluates the Sustainability Steering Committee's recommendations for environmental, social and governance (ESG) practices and makes remedial recommendations to the Board of Directors on ESG issues. CGC monitors the company's compliance with sustainability principles. The progress on sustainability ratings and indexes are monitored by CGC and presented to the BoD. One of the independent Board Members is Head of Corporate Governance Committee and also a member of and Sustainability Steering Committee.</p>
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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 – all meetings	<ul style="list-style-type: none"> Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues Other, please specify 	<p>Cement industry currently represents about 7-9% of CO2 emissions globally and needs to take actions to reduce it for a low carbon future. Besides, climate-related risks become a more critical issue worldwide. From that perspective, Akçansa Board takes the highest responsibility to define sustainability vision, strategy, policies, frameworks, sustainability related risks and opportunities in the company's transition to low carbon future. The Board has reviewed and approved the Sustainability Strategy and 2030 Sustainability Targets that includes the CO2 reduction and other environmental sustainability targets. For cement business, use of any sort of available alternative fuels with high biomass content instead of fossil fuels is the main potential to mitigate the impact on climate change. Additionally, climate-friendly and low CO2 product portfolio is another lever for an effective transition to a low carbon economy. These have been clearly defined by the Board in company sustainability strategy. In Board meetings, CO2 reduction is followed up and evaluated under operational performance of Plants including substitution rate of alternative fuels in fuel mix, clinker in product mix, energy efficiency and renewable energy KPI's. From this perspective, the Board has the responsibility to review and approve annual budgets and investment plans. One of the Board members is the Chair of Early Risk Identification</p>

	<p>Approving policies and frameworks</p>	<p>Committee which handles climate-related risks as well. The Early Risk Identification Committee review and guide sustainability & risk management policies. Committee meets 6 times a year and reviews risks and opportunities, including those related to climate change and the Board is informed periodically about the assessments. Another Board Member is the Chair of Corporate Governance Committee. Corporate Governance Committee is responsible for monitoring the company's compliance with sustainability principles. Corporate Governance Committee meets 4 times a year and reviews sustainability updates, progress on KPI's and implementation of sustainability related projects. More broadly, the Board is also periodically informed by the Sustainability Steering Committee on setting and/or evaluating the progress against set sustainability targets which include KPIs on measuring climate-related performance. The Board also sets performance objectives for company scorecard, top managers, and Managing Board members themselves within the context of climate-related targets.</p>
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C1.1d

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

	Board member(s) have competence on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1	No, but we plan to address this within the next two years	Important but not an immediate priority	A competency assessment study has not yet been conducted for board members, but the board chair, vice chair and corporate governance committee chairman have long-term industry experience in sustainability and climate-related issues. It is planned to conduct a skill matrix study within two years, in which the experiences in the direction of climate-related policy and strategy management are evaluated.

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	Quarterly
Other, please specify Sustainability Steering Committee ☞ ₁	Both assessing and managing climate-related risks and opportunities	Quarterly
Sustainability committee ☞ ₂	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Chief Operating Officer (COO) ☞ ₃	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify Sustainability Manager ☞ ₄	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Risk manager ☞ ₅	Assessing climate-related risks and opportunities	More frequently than quarterly
Facility manager ☞ ₆	Managing climate-related risks and opportunities	Quarterly
Other, please specify Energy Purchasing Manager ☞ ₇	Managing climate-related risks and opportunities	Quarterly
Other, please specify Environmental Executive ☞ ₈	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly

☞₁Sustainability Steering Committee meets 4 times a year to overview the critical climate-related risks and opportunities as well as the targets and performance.

☞₂Sustainability Committee meets 6 times a year and reviews and assesses the climate related risks and opportunities as well as the other sustainability related issues.

3COO (Deputy General Manager - Operations) is the chair of Sustainability Committee and a member of Sustainability Steering Committee, thus via these committees reviews and assesses the climate related risks and opportunities as well as the other sustainability related issues.

4Sustainability Manager works with Risk Manager to assess and review climate related risks and opportunities and also a direct report to COO.

5Risk Manager assesses and manages climate-related risks and opportunities and reports to Early Determination of Risks Committee 6 times a year.

6According to risk assessments facility managers define action plans to mitigate the risks and manage the opportunities as well.

7Energy purchasing manager has a key role in mitigation of CO2 emissions via alternative fuel usage. He is responsible for finding new alternative fuel sources with high biomass content and from that perspective he manages CO2 related risks and opportunities.

8Environmental Executive has a key role in monitoring, verification and reporting of CO2 emissions. He is mainly responsible for environmental compliance issues according to regulations and management of ISO 14001 Environmental Management System. He is also supporting alternative fuel and raw materials usage at plant level. From all that perspective he has a responsibility to manage environmental related risks and opportunities together with Risk Manager and Sustainability Manager.

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).

Climate -related issues are one of the top priority topics undertaken as part of sustainability management at Akçansa.

Akçansa Board of Directors is the highest level which is responsible of defining sustainability vision, strategy, risks and opportunities. Board has a dedicated Early Risk Identification Committee that is reviewing and guiding risk management processes including climate-related risks. President of the Committee informs Board on sustainability risks and opportunities during Board Meetings. Another Board-level committee is Corporate Governance Committee (CGC) that is responsible for reviewing the sustainability progress of the company. President of CGC also informs Board on sustainability updates during Board Meetings.

Chair of the Board is representing Sabancı Holding as President of Building Materials Business Unit. His responsibility is to approve sustainability vision and strategy.

Vice President is representing HeidelbergCement as Vorstand Member responsible from CEO Africa & East Mediterranean. His responsibility is to define sustainability vision and strategy.

Board Members have the responsibility to review, propose, monitor and inspect sustainability vision and strategy. One of the Board members is the President of Early Risk Identification Committee which handles climate-related risks as well.

Akçansa CEO (GM) both approves and reports on key sustainability KPIs and relevant ongoing projects to the Board members twice a year on behalf of Sustainability Steering Committee. Board is informed by CEO on climate related KPI's such as CO2 emissions, alternative fuel usage, clinker usage, energy KPI's during Board Meetings.

Sustainability Steering Committee (SSC) consists of Akçansa Executive Committee Members (CEO and other C-Suite Officers (Deputy GMs) and a Board Member who is also the President of Corporate Governance Committee. Its main mission is to approve and follow up sustainability targets & climate change related projects, performance and roadmaps. SSC meets four times a year in which Chair of SC shares important issues to SSC members. SSC reports to Akçansa Board of Directors.

Sustainability Committee (SC) takes the key position to set corporate targets as well as to develop and implement projects. Being chaired by Deputy General Managers (DGM) of Operations and Human Resources Functions at the same time who directly report to General Manager (GM), it is composed of 6 pillars managed by relevant corporate managerial positions. Committee Members build Working Groups (WGs) to develop and implement projects to reach sustainability targets. SC is composed of 6 pillars namely; Occupational Health & Safety, Reducing Environmental Footprint, Innovation & Digitalization, Circular Economy, Being a Good Neighbor and People, Compliance & Transparency including stakeholder engagement topics. Each pillar is managed by relevant corporate managerial positions. Committee Members build Working Groups (WGs) to develop and implement projects which would maintain to reach sustainability targets. SC meets 6 times a year and reports to SSC.

Chief Operating Officer (COO) (Deputy GM for Operations) has the responsibility of chairing the SC and is a member of SSC. 3 Plant Managers, Sustainability Manager and Environmental Executive directly report to him. He sets the climate related targets (such as alternative fuel rate, clinker usage, renewable energy and energy efficiency KPIs) together with Plant Managers and Sustainability Manager (both are direct reports of COO).

Plant Managers are responsible of setting the climate change related targets (such as alternative fuel rate and energy efficiency KPIs) together with Deputy GM-Operations and raw materials and Environmental Manager. They monitor these KPIs regularly and reports.

Sustainability Manager is responsible of setting the climate change related targets (such as alternative fuel rate and energy efficiency KPIs) together with Deputy GM-Operations (COO) and Plant Managers. She assesses the climate related risks with Risk Manager and mitigation actions with COO. She directly reports to COO and participates to CGC meetings. Board Chair and Vice President are also informed by Sustainability Manager monthly or more often if needed.

Environmental Executive is the Head of “Reducing Environmental Footprint” pillar in SC. He is supported by his direct reports (Environmental Management Team: environmental engineers at plants responsible of ISO 14001 EMS management, compliance to regulations, CO2 emissions follow-up/calculations/reporting).

Risk Manager assesses and follows climate related risks together with Sustainability Manager. She is a direct report of Akçansa CEO (GM). She reports climate related risks to Sabancı Holding and Early Risk Identification Committee regularly.

Energy Purchasing Manager and his team are responsible of sourcing alternative fuels to plants, also have annual performance targets on alternative fuel supply rate and cost.

C1.3

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

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	There is management by performance targets process in place at Akçansa. Each individual has its own targets which are set in the Q1 after approval of Deputy GMs (DGMs) and GM. Targets are reviewed at the end of Q2 for feedback and Q4 for final assessment. Targets are set from top to bottom that means company scorecard and GM targets are set first, then DGM targets are set and finally the rest come. Performance targets of all levels include various sustainability KPIs ranging from CO2 emissions, alternative fuel usage, biomass content of alternative fuels, raw material utilization, contribution of digitalization in increasing environmental performance, energy management, use of renewable sources, improvement of emissions management, resource efficiency etc. Based on performance score -if an employee reaches its own target plus company reaches its economic targets- then employee receives monetary incentives. CO2 reduction is also included in company scorecard and valid for all employees.

C1.3a

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

Entitled to incentive	Type of incentive	Activity incentivized	Comment
All employees	Monetary reward	Emissions reduction project Energy reduction project Efficiency project	Akçansa has a "Suggestion System" and "Continuous Improvement Project" both of which are open to all white-collar and blue-collar employee aiming for engagement and operational continuous improvement. This system encourages all employee to provide suggestions on any kind of projects and topics including enhancement of environmental management system, energy efficiency, renewables, resource efficiency, increasing alternative fuels rate etc. all of which directly contribute to Climate Change Management. Suggestions which are awarded bring the monetary award to white-collar employee and additional promotional opportunities to blue-collar employee.

Other, please specify White collar employee (from General Manager to Engineers)	Monetary reward	Emissions reduction target Energy reduction target Efficiency target	All Akçansa white collar employee from CEO to engineers and technicians benefit from monetary reward based on their performance achievements throughout the year. The annual personal performance targets are set in the beginning of year. The emission reduction target in the company scorecard is reflected to the performance targets of all employees. Climate-related targets include plant specific KPIs such as energy efficiency, rate of alternative fuels and biomass in fuel mix, clinker/cement ratio, usage of renewable sources. Those who achieves operational performance targets are rewarded with a bonus payment on a yearly basis.
Board/Executive board	Monetary reward	Emissions reduction target Energy reduction target Efficiency target	Board Members and Executive Committee Members receive a monetary reward if the overall performance of the Group CO2 related targets is achieved. Performance indicators are determined in accordance with the Remuneration Policy for the Members of the Board of Directors and Senior Executives, in line with the main company targets, to include non-financial long-term sustainability indicators as well as financial indicators.
Corporate executive team	Monetary reward	Emissions reduction target Energy reduction target Efficiency target	Board Members and Executive Committee Members receive a monetary reward if the overall performance of the Group CO2 related targets is achieved. Performance indicators are determined in accordance with the remuneration policy for the members of the board of directors and senior executives, in line with the main company targets, to include non-financial long-term sustainability indicators as well as financial indicators.
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction project Energy reduction project Efficiency project	All Akçansa white collar employee from CEO to Engineers benefit from monetary reward based on their performance achievements throughout the year. The annual personal performance targets are set in the beginning of year. Climate-related targets include plant specific KPIs such as CO2 emission reductions, energy efficiency, rate of alternative fuels and biomass in fuel mix, clinker/cement ratio, usage of renewable resources etc. Those who achieves operational performance targets are rewarded with a bonus payment on a yearly basis. Performance indicators are determined in accordance with the

			remuneration policy for the members of the board of directors and senior executives, in line with the main company targets, to include non-financial long-term sustainability indicators as well as financial indicators.
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C2. Risks and opportunities

C2.1

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

Yes

C2.1a

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

	From (years)	To (years)	Comment
Short-term	0	5	In Akçansa, short term Strategic Plan covers a 5-year lifespan and is revisited frequently and updated if needed.
Medium-term	5	10	Akçansa's mid-term definition covers 5 to 10 years and the Company Mid-term Action Plan is determined in and monitored against the 5 year Master Plan.
Long-term	10	30	Akçansa considers beyond 10 years is a long-term period. The vision for long term is guided with a 10-year Master Plan. In addition to this, while addressing its climate change actions, Akçansa considers 2030 and 2050 as key milestone years & sets targets accordingly. Moreover, both our shareholders Sabancı Holding and Heidelberg Cement also sets climate-related targets for 2050.

C2.1b

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

Akçansa manages its risks in line with both Sabancı Holding and Heidelberg Cement risk management procedures/ guidelines, and evaluates corporate level as well as asset level risks under multiple categories, namely; financial, operational (service breakdown/disruption) customer, supplier, employee, reputational and compliance risks. Substantive financial and strategic impacts, which are risks that are scored/classified as critical risks, are defined as effects that pose a risk to undermine the entire business. Corporate level substantive risks are defined;

Quantitatively as risks above USD 500,000; TL 4,445,000 (Indicative Average Exchange Rate announced on 12/31/2021 by the Central Bank of Turkey as 8.89 USD/TL) on an annual basis
Qualitatively as risks that are a threat to our core business model and business continuity which are evaluated considering risk categories and calculated by Risk Methodology heatmap.

C2.2

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

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

At Akçansa, Risk Management is an integrated and multi-disciplinary process. Identification and monitoring of all possible risks that our company may face form the basis of risk management. The company and managers have classified the possible risks according to defined risk categories. As part of Akçansa's risk management approach environmental, social, economic, governance and climate risks are holistically assessed and preventive processes are developed. Board of Directors is the highest-level or management with direct responsibility for all sustainability and climate-related risks and opportunities. Akçansa defines, continuously evaluates and manages its climate-related risks within the framework of corporate risk management practices and in line with the Integrated Management System (IMS) containing ISO 14001:2015 as well as with the direction of the Board. Climate-related transition and physical risks that may arise from climate change-related impacts especially risks regarding compliance to environmental regulations are reported to Sabancı Holding by Risk Manager through "Compliance Risks Report", a consolidated risk follow-up inventory is updated on a quarterly basis. This procedure is directly linked to Sabancı Holding Risk Management Procedure and HeidelbergCement Risk Management System Guidance. Risks arising from operations at the facilities are managed with ISO 14001:2015 Environmental Management System standards. Each department (operations, environment, finance, legal, sales, etc.) defines and evaluates their risks according to defined thresholds and

is then controlled by the Environmental Engineer, Plant Managers, Site Supervisors on plant basis. The defined risks are then reviewed by Risk Manager. High (Substantive) climate-related risks including transition and physical risks are assessed by Sustainability Manager and Risk Manager together with Operations Deputy General Manager (COO). The action/mitigation plans are evaluated and approved by the Sustainability Steering Committee and risks and opportunities with action plans presented to Board of Directors throughout the Board-level committees (i.e. Early Risk Identification Committee) and/or Board Meetings. TCFD recommendations are taken into account in the determination, evaluation and management of climate-related risks defined under environmental risks. In the meantime master plans of plants are developed in every 3-5 years period and reviewed at least two times a year. Also all targets defined in 2030 Sustainability Targets are linked with defined sustainability risks and each target have a specific action plan. These action plans are reviewed quarterly with the owner of each action and the main responsible for the target, and the progress and disruptions are analyzed and updated when necessary. The Sustainability Committee regularly monitors relevant actions and projects. These studies are contributed by Operations Team members including Plant Managers and Plant Executive Team, Corporate managers for Sustainability, Environment, Raw Materials, Maintenance, Project, R&D, Process under leadership of Operations Deputy General Manager (DGM - Operations, COO). The Master Plan and Sustainability Action Plans are very critical and key components of this assessment. All facts regarding current status, future forecast/expectations (including regulatory changes) and technical needs are evaluated in Master Plans. Here, the impact of climate related issues such as emerging regulations, carbon pricing mechanisms, acute or chronic extreme weathers on finance and plant's operating strategies are considered. The current Master Plan covers the period of 2020-2030.

As part of physical risks, Akçansa evaluates climate-related main substantive risk as acute extreme weather events (floods or heavy hail etc.) which may cause a risk to production disruption either due to upstream impacts on continuous supply chain processes, or as a result of damage to our production plants, quarries or ports which will last over a day of a production stoppage. In order to manage these types of physical risks in line with company level risk management procedure, Akçansa implements a number of initiatives such as; insuring all its facilities from a wide-range of impacts including extreme weather events; having a certain level of raw material and fuel stock to prevent supply chain-related production disruption due to physical climate-related events.

As part of substantive climate-related transition risks, operating in a cement sector, one of Akçansa's most material sustainability topic, as well as a potential substantive impact risk is greenhouse gas emissions (will be referred to as CO2 emissions or carbon). Recent developments on establishing a pricing system/mechanism on carbon via emerging regulations on both a national & international level, will result in significant direct/indirect cost increase for Akçansa. Therefore, is evaluated as a substantive climate-related transition risk. In order to manage this risk, Akçansa has developed a mitigation plan including a number of measures to reduce CO2 emissions such as increasing the usage of alternative fuels and biomass instead of fossil fuels, energy

efficiency projects, process optimization projects and increasing the ratio of renewable energy sources.

C2.2a

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Akçansa always values all regulatory risks relevant as part of its risk assessment process, including regulations regarding climate-related issues. Currently, only direct climate-related regulation in force in Turkey is "the Monitoring Reporting Verification of GHG emissions" which has been in force since 2015. Based on this regulation, we calculate, obtain verification and report our CO2 emissions to the Ministry of Environment and Urbanization and Climate Change on an annual basis. The report also includes the areas of improvement. This regulation bears no financial sanction at the moment other than non-compliance fine that may result from not disclosing CO2 emissions within the defined deadline. The current regulations are followed closely by the Environmental Management Unit and Legal Counsel with the support of Sustainability Department.
Emerging regulation	Relevant, always included	Similar to the current regulations, Akçansa considers all (including emerging) regulatory risks as relevant and always assesses these potential risks as part of its company-wide risk assessment process. In October 2021, the General Assembly of the Turkish Grand National Assembly (TBMM) ratified the law proposal for the ratification of the Climate Agreement signed in Paris in 2015. Ministry of Environment, Urbanization and Climate Change has been working on PMR Project (Partnership for Market Readiness), with the funding of World Bank, to define the best system for carbon pricing to be implemented in Turkey. As a result of an advanced stage simulation, it is likely that the pricing system to be implemented will be an emission trading scheme (ETS). Following the PMR project, World Bank Partnership for Market Implementation (PMI) project has started. The development objective of the PMI is to facilitate the direct implementation of carbon pricing policies and instruments in Turkey through technical assistance and capacity building. With the ratification of the Paris Agreement towards the end of 2021 and the announcement of Turkey's goal of being net zero by 2053, regulatory efforts gained momentum. A draft climate law, which will also include regulations on carbon pricing is on pre-publishing stage. Simultaneously, the country's first large-scale and multi-stakeholder meeting, Climate Council was held in the first months of 2022. Although the draft decisions have not been announced yet, all developments indicate that an emissions trading system will be

		<p>announced in the short term. This means potential carbon limitation, quotation and pricing will come which can potentially result in a significant cost increase for companies operating in high emission intensity sectors such as Akçansa. We assess the risks associated with carbon pricing plans in Turkey and around the world (such as Carbon Border Adjustment Mechanism of EU) and manage these risks with comprehensive allocation and forecasting models managed by the Strategy and Finance executives, together with the Sustainability Manager, Risk Manager, responsible Board Members and other relevant departments. To assess and manage emerging regulation risks, we monitor developments worldwide and work closely with relevant industry associations and other stakeholders (e.g. Business Associations, other NGOs) and policy makers on emerging regulations through the Sustainability Department and other departments.</p>
Technology	Relevant, always included	<p>Since Akçansa is a technology driven company, risks arising from adopting the optimum & potential low-carbon technologies is always relevant for the company. Technology risks are defined by Digitalisation & Industry 4.0. Manager, a direct report of General Manager, climate-related technology risks, are reviewed by the Sustainability Manager and reported by Corporate Risk Manager to Sabancı Holding Risk Committee. A likely risk from technology could be that plants may not operate without a carbon mitigation project (carbon capture and storage etc.). Our carbon mitigation strategy takes such risk into consideration in a way to maximize alternative fuel rate in fuel mix. On the other hand, technological improvements bring opportunities to cement business to combat climate change. Machine learning, Internet of Things, various sensor technologies are available today to control process systems. In order to manage technology related risks, we use full automation systems in our plants to provide the best process conditions so that maximum use of alternative fuels is enabled. We aim to free the production processes from human error with the dissemination of autonomous production systems, and in this way, we reach more efficient processes. In this direction, we aim to reduce the use of fossil fuels with better combustion conditions. We also follow new product technologies closely and produce projects for the use of new technologies in both cement and concrete in our product mix. This is surely needed for low carbon future. Similarly, new sensor systems are used at various stages in the process bringing about energy efficiencies. Very huge fans, motors are followed-up and more precisely controlled thanks to technological improvements. Technology related climate risks may arise from adaptation to new technologies required for the decarbonization of the cement industry and cost increase with investments made for the development of technologies. Carbon capture, storage and utilization (CCUS) is underway in the sector. We continue our research CCUS. We closely follow up the progress with</p>

		experts at our shareholder HeidelbergCement. Akçansa also develops projects with different focus groups on the development of various CCUS technologies, potential collaborations and possible investments, with the support of Sabancı Holding. On the other hand, it was decided to receive a special consultancy at the end of 2021 on this subject and started to work with expert consultants.
Legal	Relevant, always included	Akçansa deems all legal risks as relevant including climate-related potential litigation risks. In order to have a social license to operate and comply with all regulatory requirements, potential climate-related legal risks are closely monitored and assessed by the Operations and Legal departments with the support of Sustainability Department and Environmental Management Unit. It is regularly evaluated and quarterly reported to Sabancı Holding via Compliance Risk Report by Risk Manager. As the awareness on climate change and its potential impacts increases, number of exemplary litigation cases have started to rise on an international level. There has been no climate-related litigation case for Akçansa, and we take every possible precautionary action to prevent such cases in the future too. For example, due to the changing environmental and climate policies, it is considered as a risk that the problems that may occur in obtaining/renewing the operating licenses of the raw material mining areas cause production stops and thus cost increases. In response to this, regular research, detection and commissioning of alternative raw material fields is included in our action plan as an action. On the other hand, carbon tax, one of the carbon pricing methods beyond upcoming emission trading scheme (ETS), is also one of the issues that come to the fore within the scope of developing climate studies. Although it is not intended to be implemented in our sector, which will be included in the emission trading system, it may be a risk for other sectors and may have an indirect impact on our operational costs (e.g. cost increase in supply chain). In this context, we follow the developments closely to manage these risks.
Market	Relevant, always included	All types of market risks are always deemed relevant and included in our risk assessment process. Recently, customer behaviors are changing very rapidly and their awareness on climate change also increases. That, indeed, brings for us the need to take various proactive measures in order to meet with increasing/changing customer/market requirements to effectively manage this risk. Strategy and Marketing & Sales department as well as R&D and Technology Department play a crucial role in the management of market risk. Today what we see in the market is that demand for low-carbon cement has been increasing and accordingly rate of green building projects in the market is rising. Hence research on new product type becomes important. Akçansa R&D department continuously works on projects for high quality low carbon cement/cementitious products. We perform projects for

		<p>alternative building materials with considerably less carbon emissions with academicians at Sabancı University. A target has been set to increase the sales of low-emission building materials in our current product portfolio, and it has also been addressed within the scope of 2030 sustainability targets. According to 2030 Sustainability strategy a product switching plan was developed to ensure that low-carbon products are included more in the product portfolio and approved by top management</p>
Reputation	Relevant, always included	<p>Reputation is a critical risk and needs special management in cement business which is, due to its consumption of natural raw materials, fossil fuels and resulting carbon emissions, unfortunately has some disadvantages from external stakeholders' perspective. Therefore, reputational climate-related risks are always deemed relevant as part of our risk assessment. This topic has become more critical after Paris Agreement which brought the emissions issue more open insight to public. Akçansa manages this risk via the coordination of Sustainability Manager, Environmental Executive, Plant Managers, Operations department and Corporate Communications Manager. We use alternative fuels consisting of wastes which would otherwise have been dumped or disposed. These alternative sources are replacing conventional fossil fuel that have significantly higher impact on CO2 emissions. We use industrial and municipal wastes, tires that completed their useful life. By using the waste as an alternative fuel source, we are a solution partner to local authorities in terms of waste management. Additionally we optimize/reduce our CO2 emissions with the highest technology measurement devices as well as autonomous production projects. We are continuously organizing "Neighborhood Councils" at each Plant with the participation of community, authority representatives and other stakeholders. The goal is to explain the state of the factory, new projects, investments, CSR activities etc. to establish an open and transparent communication with them and, to understand our stakeholders by listening to their complaints, wishes, opinions and suggestions. That is a very effective way of communication that helps a lot managing reputation. We also do use social media to explain our climate-related/carbon mitigation R&D projects (low CO2 cement, alternative cementitious products). Corporate Communications and Sustainability Departments work closely to manage that risk.</p>
Acute physical	Relevant, always included	<p>We consider acute physical climate-related risks very much likely to happen in short terms and they could have a serious impact to our production plants and result in additional cost and potential physical damages. Therefore, this risk type is deemed relevant and is always included in our risk assessment. Turkey, unfortunately like every single part of the world, faces increasing acute physical risks at country level,</p>

		<p>such as unpredictable/extreme rainfalls, wildfires, draughts, floods etc. These risks are evaluated by Sustainability Manager with support of our Risk Manager and Operations on a regional basis and reported to Sabancı Holding and Akçansa Board of Directors. An example of an acute physical risk would be lack of water from wells (happened in Ladik plant in 2015), flooding of our plant because of a very high rainfall (happened in Büyükçekmece Plant in 2014 and 2016) which caused disruption in production and damage to the plant. Additionally, we purchase coal/petrocoke from other countries, export cement/clinker to various countries by shipment and in case of a storm the shipments/supplies would be disrupted and may lead to potential disruption of operation. Such conditions also effect local supplies and sales also. In order to manage the impact of these sorts of risks, Akçansa obtains insurance all its facilities against various risks including extreme weather events related risks. Beyond, alternative and local suppliers are continuously evaluated in order to protect the production from the effects of climate change and the disruptions that may occur in raw material and fuel logistics,</p>
Chronic physical	Relevant, always included	<p>Akçansa takes climate-related chronic physical risks very seriously since these can have a long-term impact on its business. Therefore, this category is deemed relevant and is always included in our risk assessment. This risk is assessed and managed by Sustainability Manager, with support of Operations and Risk Manager and reported to Sabancı Holding and Akçansa Board of Directors. An example for a chronic climate physical risk can be the expected rise in sea levels. Akçansa's Çanakkale Plant, being the biggest production plant amongst the 3, is located by the sea. Therefore, a rise in sea level may result in temporary production disruption over the mid-term or a relocation need for the plant over the long-term. Our facilities located in the Marmara, Aegean and Blacksea regions are located in areas under water stress. We consider the negative impact of production processes in line with water stress and reduction in water resources as a climate-related chronic risk. We aim to manage risk with measures such as reducing the use of water in production, identifying and preventing loss and leakage, and keeping water use under control with digital monitoring processes.</p>

C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Carbon pricing mechanisms

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

The Paris Climate Agreement will impose limits on carbon emissions to the cement business based on Turkey's INDC - Intended Nationally Determined Contributions. With Turkey's ratification of the Paris Agreement, NDC updates, the new climate law and the carbon pricing mechanisms to be covered by this law have gained momentum. With the ratification of the Paris Agreement towards the end of 2021 and the announcement of Turkey's goal of being net zero by 2053, regulatory efforts gained momentum. Simultaneously, the country's first large-scale and multi-stakeholder meeting chain, the Climate Council was held in the first months of 2022 in Konya province. Although the draft decisions have not been announced yet, all developments indicate that an emissions trading system will be announced in the short term. The Turkish Ministry of Environment, Urbanization and Climate Change conducted a project called the Market Readiness Partnership (PMR) to evaluate which market-based carbon pricing system would be best for Turkey. To date, ETS (emissions trading scheme) is the pricing mechanism most likely to be adopted under this project. Following the PMR project, the World Bank Partnership for Market Implementation (PMI) project started. The development objective of the PMI is to facilitate the direct implementation of carbon pricing policies and instruments through technical assistance and capacity building. Whether free allowances will be granted or what the price level for carbon will be is yet to be defined; however, in the short term, a carbon pricing process will be initiated that will impose additional operational costs on Akçansa due to the CO₂ emissions originating from 3 production facilities, namely Büyükkçekmece (BCM), Çanakkale (CNK) and Samsun-Ladik (LDK). There will be a necessity for additional CO₂ reduction investments causing a significant increase in costs. However, costs can also be significantly impacted by the carbon prices to be paid for carbon emissions if sectors fail to meet the given targets. There may also be a risk that the cost increase will be reflected in the product prices, and this may create a competitive disadvantage. In order

to manage this possible risk, Akçansa has determined emission reduction targets and started to implement necessary action plans for this. The magnitude of this risk will mainly depend on Turkey's updated INDC, market price of carbon allowances, the volume of free allowances and our cement production volume.

Time horizon

Short-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)

0

Potential financial impact figure – maximum (currency)

617,007,858

Explanation of financial impact figure

We use various scenarios to estimate or analyze the financial impact of the cap and trading systems. It's important to note that the price prediction above is only the result of one of the scenarios we reviewed. The fact that a carbon pricing mechanism has not yet been formally established in Turkey makes impact analysis difficult, but it is anticipated that the infrastructure of the system to be established will be largely similar to the EU ETS according to several stakeholder meetings (i.e. PMI project stakeholder meeting, climate council roundtable meeting etc.) From this point of view, it is anticipated that Turkey may similarly use benchmark values likewise EU. Benchmark value for EU countries between 2021-2025 was announced to be 693 kg CO₂e/ton clinker. On the other hand, it is also among the opinions that the country can use its own benchmark value in the first transition phase to the ETS. Moreover, Turkish Cement Manufacturers' Association (Türkçimento) conducted an analysis for sectoral benchmark values in Turkey. With the projects implemented by Akçansa to reduce CO₂ emissions, it was anticipated that Akçansa's emission value would be lower than the benchmark value to be determined for Turkey, and the minimum impact was evaluated as 0 for the best-case scenario. EU ETS benchmark values are taken into account for worst case scenario.

Year 2021 gross specific CO₂ emission of our 3 plants is 859 kg CO₂e ton/clinker.

According to our 2021 CO₂ emission values;

According to this figure, it is calculated that 166 kg CO₂/ton clinker will be exposed to the carbon price. (The difference between our actual emission and EU Benchmark values is 166)

Year 2021 total clinker production at our 3 plants (Büyükçekmece, Çanakkale and Ladik) is 6,698,230 tons. The excess specific CO₂ emission is 1,111,906 tons thus 1,111,906.18 tons of CO₂e might undergo for a carbon cost to Company. In calculation, The average EU ETS unit price was accepted as reference which was realized as 53 EUR/ton CO₂e in 2021 (<https://tradingeconomics.com/>)
2021 average Euro/TL exchange rate was taken as 10.47 TL from the Central Bank of Turkey.
The maximum financial impact was calculated as 617,007,858 TL.

Cost of response to risk

15,973,761

Description of response and explanation of cost calculation

In order to manage this risk Akçansa implements a wide range of initiatives. a) we continuously conduct R&D studies to lower the CO₂ content of our product and develop low-carbon products (2021 total budget: approx . TL 1,205,000), b) we implement emission reduction initiatives for increasing alternative fuel consumption with lower CO₂ emission, equipment replacement and maintenance to enable energy consumption reduction and process efficiency projects for more effective combustion conditions during the process and other process optimization studies (2021 total CO₂ scope 1 related CAPEX: approx 14,768,761 TL), c) We have conducted EPD self declaration using Global Cement and Concrete Association (GCCA) tool for 22 concrete products to better understand and accordingly manage where in the life cycle CO₂ emissions arise and where we can focus to lower these emissions (no investment cost) d)CCUS project research group has been established to assess the investment requirements, technological partnerships, funding options etc. (no investment cost) (CCUS is seen as an important lever in CO₂ emission reduction)

It is important to underline that the figure calculated here is for 2021 only. There are many additional projects and investments within the "CO₂ Roadmap" created within the scope of "2030 Sustainability Targets". Akçansa is preparing for future carbon pricing mechanisms with CO₂ reduction investments and projects.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Flood (coastal, fluvial, pluvial, groundwater)

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

Acute Physical climate-related events have already increased in frequency and severity in regions Akçansa operates. Climate projections indicate these acute extreme weather events will considerably increase in frequency as well as severity. The main risks arising from this risk for Akçansa covers all our facilities from quarries, production plants, terminals/ports, ready-mixed concrete and aggregates facilities and may result in temporary-long term production/operation disruption, potential physical damage to facilities and physical assets. In such a case, we may be faced with a potential revenue loss due to disruption to production and resulting in lower production output.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

2,871,404

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

While estimating the potential financial impact related to this risk, by assessing the costs involved in the time it took to bring the plant back to pre-incident production levels, along with the loss of production, we based our calculations on the assumption of 0.1% loss based on our 2021 revenue. Our 2020 revenue was TL 2,871,403,785.

Cost of response to risk

8,000,000

Description of response and explanation of cost calculation

As part of our efforts to manage this risk, the primary action we implement is to obtain insurance for all our facilities. Since the exact total 2021 insurance (premium) cost is considered as a confidential cost, we give the average of a range covering our environment & climate-related insurance (premium) cost: TL 5 to 10 million and disclose the average of this range as an indicative cost as TL 8 mio. Akçansa also defined emergency response and adaptation plans for facilities with high risk potential regarding acute extreme weather conditions.

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical

Sea level rise

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

As per the climate projections, there is an expected sea level rise resulting due to climate change. According to Nasa's earth observatory projections, depending on the measures taken (from net zero pathway to high emission Business as Usual pathway) the sea levels are projected to rise from 1 to 4 meters. As Akçansa's Çanakkale (CNK) plant is located by the sea, this projected sea level rise can cause temporary or potentially long-term disruption or need to relocate the plant. Even though this is a long-term projection, it can still pose a risk to temporary production/operation disruption at the CNK plant due to significant physical damage.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

24,900,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

While estimating the potential financial impact associated with this risk, we included the cost related to damages to the production line which also leads to the stoppage of the kiln potentially for a month. The figure represents the potential cost of damage plus loss of revenue with regards to this risk. Since the breakdown of this financial figure is confidential, we cannot disclose.

Cost of response to risk

8,000,000

Description of response and explanation of cost calculation

The management of these risks is integrated into our corporate risk management processes. The cost of response to this risk mainly consists of our environment & climate-change related insurance (premium) cost to remedy such physical damage to CNK Plant and indirect losses related to this. Since the facility specific insurance cost is considered as confidential, we give an estimated average of a range of our total company-wide environment & climate-related insurance (premium) cost. The indicative range is between TL 5 to 10 mio and therefore the average of this range can be given as TL 8 mio.

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?

Upstream

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Reduced direct costs

Company-specific description

As a carbon intensive sector, cement companies, if they act proactively and reduce their emissions, they can benefit from reducing their indirect operating costs. Through the low carbon future, the promising potential ahead of cement industry is the use of alternative fuels, maximizing biomass (such as sewage sludge) in fuel mix to reduce CO2 emissions. Rate of alternative fuel usage Turkish cement industry is around 8.0% which needs to be increased. Akçansa's realized alternative fuel usage rate was 19.1% in 2021. Therefore, accelerating the alternative fuel rate in fuel mix can create a competitive advantage as a result of reduced energy costs.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

39,887,766

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact was calculated using actual 2021 annual monetary savings resulted from the increased usage of alternative fuels instead of relatively expensive and high emission bearing conventional fuels such as petcoke and coal.

Cost to realize opportunity

5,576,501

Strategy to realize opportunity and explanation of cost calculation

Our strategy to realize this opportunity consists of CAPEX investment for increasing alternative fuel usage rate in all cement plants. The cost given in "Cost to realize opportunity" figure is total CAPEX for 2021 projects implemented and commenced according to our 2030 Sustainability Targets which includes alternative fuel increase target and our CO2 Roadmap. According to our CO2 roadmap our objective is to increase alternative fuel rate up to 35% with the initiatives and investments by 2030. Total 2021 CAPEX planned to increase alternative fuel usage according to the roadmap is given as the cost to realize this opportunity. We also consider that this opportunity will increase gradually in the future in terms of financial figures.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Most of the cement sector related CO₂ emissions arise from clinker production which is one of the main raw materials for cement. However, by using alternative raw materials and development of cementitious products (with lower clinker ratio) not only we can achieve low carbon product transition, but also provide value-added sustainable products to our customers. Therefore, dedicating a workforce and a budget for development and or expansion of low emission goods and services via R&D will enable Akçansa to sell more products and potentially to even wider markets with higher awareness regarding climate change and therefore demanding low carbon products. This opportunity will embark itself as increased revenues resulting from increased demand for Akçansa's low carbon products.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

28,714,038

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

This opportunity has a potential to have high financial impact over the long term. We have not yet conducted a detailed market research to quantify this impact and therefore while estimating the potential financial impact related to this opportunity, we based our calculations on the assumption of a 1% revenue increase due to increased demand to our low carbon products. Our 2021 revenue was TL 2,871,403,785.

Cost to realize opportunity

1,205,000

Strategy to realize opportunity and explanation of cost calculation

Strategy to realize this opportunity is implemented via continuous R&D studies. Cost associated with realizing this opportunity is the total low carbon & sustainable product related R&D budget realized in 2021.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Day by day, customers' awareness of the climate is increasing and their demands are changing towards greener products. The number of green projects targeting green building certificates such as LEED and BREEAM is constantly increasing. In this direction, customers' demand for more sustainable products can provide a potential income increase for Akçansa, which has a green and environmentally friendly sustainable product portfolio and aims to further develop its product mix with new products in the medium term.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

Akçansa prepared EPD self declaration using GCCA's tool for 22 concrete products, using its own internal resources. In line with the demands of the customers, Akçansa shares the necessary information that customers need in green building investments in a solid way by transparently sharing the environmental impacts that the products cause throughout their life cycle. Since internal resources are used completely, there is no need for any investment or additional budget, so there is no additional cost in the realization of the opportunity.

Comment

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resilience

Primary climate-related opportunity driver

Resource substitutes/diversification

Primary potential financial impact

Reduced direct costs

Company-specific description

In line with the use of wastes as alternative fuel and alternative raw materials, effective use of resources is ensured and a contribution is made to the fight against climate change. With the transition to the circular economy, Akçansa will be able to obtain opportunities with more efficient use of resources in terms of cost efficiency.

Time horizon

Long-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)

16,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

With the use of alternative sources as raw materials, a cost saving of 16 million TL was achieved in 2021.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

No additional cost is required for alternative raw material usage in cement production.

Comment

Akçansa's Büyükçekmece and Çanakkale plants are the only ones in Turkey that have the Gold Level Responsible Use of Resources Certificate.

In 2021, 583,000 tons of waste was used as alternative resource (Alternative fuel and alternative raw material totals) and have prevented from going to landfill.

C3. Business Strategy

C3.1

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

Row 1

Transition plan

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

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

Akçansa has a transition plan based on the 2DS scenario which has been reviewed and approved by the Board of Directors. Currently, a decarbonization and namely a "net zero" project with internationally experienced external consultants is ongoing, in order to be aligned with the 1.5°C scenario. The decarbonization project was initiated with the decision of the Board of Directors in order to prepare a transition plan compatible with 1.5 degrees. At the end of the project -that will continue in 2022- it is aimed to prepare a transition plan within two years, aligned with the 1.5°C scenario and inline with the science based goals . The decarbonization studies are followed by the Board of Directors during the board meetings and decisions are taken in annual general meetings regarding the climate related scenarios and the results.

C3.2

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

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

C3.2a

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

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios IEA 2DS	Facility		Cement Low-carbon Technology Roadmap, conducts scenario analyses against the reference technology scenario (RTS), or nationally determined contributions (NDCs) and the 2DS for the entire industry globally. 2DS acknowledges that transforming the energy sector is vital, but it is not the sole solution: the goal can only

		<p>be achieved provided that CO2 and GHG emissions in nonenergy sectors are also reduced. Global GDP is assumed to more than triple between 2017 and 2060. Growth until 2030 in emerging markets is assumed. In line with the lower oil and gas prices in the 2DS, coal prices are also considered to be significantly lower due to the large shift away from coal. The global power sector can reach net-zero CO2 emissions by 2060 under the 2DS scenario with the use of renewables and carbon capture and storage technologies. Technologies that are not yet commercial play an important role in industrial process decarbonization, contributing to an 18% reduction in cumulative direct CO2 emissions in 2DS. In the 2DS electricity is accepted to be the largest final energy carrier, slightly ahead of oil. It is accepted that carbon pricing systems are applied. Different carbon price scenarios were assumed; EU ETS carbon price, 50% lower than EU ETS price and 20% lower than EU ETS price. All assumptions used in scenario analysis are in line with IEA's Energy Technology Perspectives 2017 report.</p>
Physical climate scenarios RCP 2.6	Facility	<p>"Representative Concentration Pathways (RCPs) are not new, fully integrated scenarios (i.e., they are not a complete package of socioeconomic, emissions and climate projections). They are consistent sets of projections of only the components of radiative forcing that are meant to serve as input for climate modeling, pattern scaling and atmospheric chemistry modeling," according to the RCP Database. Global climate models represent the planet as millions of grid boxes and then solve mathematical equations to calculate how energy is transferred between those boxes using the laws of thermodynamics. If done correctly, these models of how energy is cycled through all parts of the planet can be used to estimate dozens of environmental variables (winds, temperature, moisture, etc.). The models are tested by simulating historical conditions and then matching the results to our historical observational records. If the models can adequately recreate the past, they are then run forward in time to predict what may happen in the future.</p> <p>RCP 2.6 Scenario was used as the "Optimistic" scenario – substantial reduction of GHG during the century with wide range of new technologies and strategies</p>

		<p>successfully introduced. For physical climate risks assessment, all facilities were assessed by their locations. The time horizon for the scenario is until 2100. According to RCP 2.6; the Earth gets warmer as CO2 increases in the atmosphere, Earth doesn't warm uniformly, the oceans warm slower than the continents and arctic. Projections are based on a high emissions scenario. Projections for temperature according to RCP 2.6 W/m2 show the level of radiative forcing by greenhouse gas emissions peaking by mid-century then returning to 2.6 W/m2 by 2100. A large-scale, global and differentiated greenhouse gas mitigation strategy and new technologies would need to be widely employed very soon .</p>
Physical climate scenarios RCP 4.5	Facility	<p>"Representative Concentration Pathways (RCPs) are not new, fully integrated scenarios (i.e., they are not a complete package of socioeconomic, emissions and climate projections). They are consistent sets of projections of only the components of radiative forcing that are meant to serve as input for climate modeling, pattern scaling and atmospheric chemistry modeling," according to the RCP Database. Global climate models represent the planet as millions of grid boxes and then solve mathematical equations to calculate how energy is transferred between those boxes using the laws of thermodynamics. If done correctly, these models of how energy is cycled through all parts of the planet can be used to estimate dozens of environmental variables (winds, temperature, moisture, etc.). The models are tested by simulating historical conditions and then matching the results to our historical observational records. If the models can adequately recreate the past, they are then run forward in time to predict what may happen in the future.</p> <p>RCP 4.5 Scenario was used as the "Stabilization" scenario – radiative forcing is stabilized before 2100 by employment of a range of technologies and strategies for GHG reduction. For physical climate risks assessment, all facilities were assessed by their locations. The time horizon for the scenario is until 2100. According to RCP 4.5, Earth gets warmer as CO2 increases in the atmosphere and Earth doesn't warm uniformly, the oceans warm slower than the continents and arctic. Projections are based on a high emissions</p>

			<p>scenario. Projections for temperature according to RCP 4.5 show the level of radiative forcing by greenhouse gas emissions stabilizing at 4.5 W/m² by 2100. Employment of a range of technologies and strategies for reducing greenhouse gas emissions are assumed in this stabilization scenario.</p>
Physical climate scenarios RCP 8.5	Facility		<p>"Representative Concentration Pathways (RCPs) are not new, fully integrated scenarios (i.e., they are not a complete package of socioeconomic, emissions and climate projections). They are consistent sets of projections of only the components of radiative forcing that are meant to serve as input for climate modeling, pattern scaling and atmospheric chemistry modeling," according to the RCP Database. Global climate models represent the planet as millions of grid boxes and then solve mathematical equations to calculate how energy is transferred between those boxes using the laws of thermodynamics. If done correctly, these models of how energy is cycled through all parts of the planet can be used to estimate dozens of environmental variables (winds, temperature, moisture, etc.). The models are tested by simulating historical conditions and then matching the results to our historical observational records. If the models can adequately recreate the past, they are then run forward in time to predict what may happen in the future.</p> <p>RCP 8.5 Scenario was used as the "Pessimistic" scenario – radiative forcing is growing beyond 2100 due to missing adaptation of technologies and strategies for GHG reduction. For physical climate risks assessment, all facilities were assessed by their locations. The time horizon for the scenario is until 2100. According to RCP 8.5 Scenario, Earth gets warmer as CO₂ increases in the atmosphere, Earth doesn't warm uniformly, the oceans warm slower than the continents and arctic. Projections are based on a high emissions scenario. Projections for temperature according to RCP 8.5 W/m² show extreme change. CO₂ levels rise to 936ppm by 2100 making the global temperature rise by about 5-6°C by 2100.</p>

C3.2b

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

Row 1

Focal questions

- What possible future developments need to be probed?
- What variables are needed to support decision-making?
- What forces and developments have the greatest ability to shape future performance?
- What will be the impact of regulatory changes (Climate Law - Emission Trading Scheme)?
- What will be the impact of physical risks? What will be the level of business interruption due to physical impacts?
- What are the technology needs and their feasibility under different reduction scenarios?
- What will be the impact on earnings, costs, revenues, and asset value?
- How will capital allocation/investments be impacted?
- What should be the timing and responses?

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

Transition Scenarios: We expect increased regulations and agreements to put more pressure on the cement industry to reduce CO2 emissions. We consider it essential to carry out scenario and impact analyzes in order to be prepared for developing regulations, and to take emission reduction measures in this direction. In line with the emerging regulations on climate, the possible effects on the value chain have been analyzed. While performing impact analysis, we determined facility-based emission reduction levers, as switching to alternative fuels, improving energy efficiency, reduction of clinker to cement ratio, using innovative technologies. New market conditions will support a growing demand for low-carbon products and solutions. We see there an opportunity to increase our market share in the range of sustainable products. In our business strategy, we recognize that additional investments are required under the 2DS scenario. We have developed our strategy accordingly to lower CO2 emissions. We conducted financial impact analyzes for different regulatory scenarios to prepare for emerging regulations. In line with these analyzes, which are reviewed and approved by Board of Directors the emission reduction rate until 2030 has been determined and the investments to be made to reach this rate have been decided. In the focus of investments, there are items such as projects to increase alternative fuels, emission reduction projects, process optimization studies, product switching plan and sales plan for new and low-carbon products, intensification of R&D activities on both cement and concrete products for the development of new technologies, energy efficiency projects and determining the potential for developing CCUS technologies. The business strategy has been shaped for considering these investments and market. In terms of business objectives and strategy, this result has impact on our decision to set a CO2 reduction

target. Akçansa, with all the initiatives determined, will reduce net Kg of CO2 emissions per metric tons of Cementitious Product by 15.7% until 2030 from 2019 levels. Physical scenario analyses: Tropical cyclone, river flooding, precipitation and fire weather, heat stress, drought stress are key risks to focus on. According to the analyses, tropical cyclone is not considered a relevant risk for Turkey. River flooding is considered minor risk for facilities. Precipitation stress considered a medium risk for and fire weather stress considered a medium to high risk for majority of operations risk in all scenarios. Heat stress considered a medium to high risk. Turkey is under water stress and our cement plants are in high water stress areas. Drought stress considered medium to major risk for majority of operations. Sea level rise not considered major risk for more than a quarter of all assets. Extreme precipitation and flooding impacting sites and supply chains in affected areas require further protective measures and mitigation plans.

C3.3

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

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Turkey is preparing itself for a carbon pricing mechanism in the short-term. This will bring industries for further needs to adapt themselves for a low carbon future. On the other hand, we expect increased demand for low-carbon goods and services in the future. We consider the time horizon covered to be medium-term for low carbon product demand in the market, which means until 2030. One opportunity for cement business is the transition to low clinker products or in other words, there is a risk in not doing so as 70% of carbon emissions result from production of clinker (60% from decarbonization of limestone and 40% from fuels). Carbon emissions are directly reduced when cement is produced using less clinker and more mineral additives. Additionally, the product mix, as much as the market demand allows, will include more blended cement composed of less clinker and more mineral and secondary material additives like slag from steel industry. We target to decrease our clinker use in cement and concrete. We have defined clear targets in our 2030 Sustainability Targets mainly in the focus area of "Innovation" and in order to do so, our strategy is to focus on R&D of low carbon products. In this direction, we established our product switching plan

		<p>for cement and concrete products containing more mineral additives and planned our investments such as the necessary production line within this scope. We have created our sustainable and low carbon product definitions for all new and existing cement products in our product switching plan by evaluating EU or other valid reference Taxonomies to define our sustainable product portfolio, including low carbon and sustainable products. We are in the process of defining sustainable product portfolio for concrete products. Moreover, the most strategic decision made in the reporting year was to self declare EPD (Environmental Product Declaration) for 22 concrete products and we became the first company in turkey to do so for ready concrete product.</p>
Supply chain and/or value chain	Yes	<p>In line with our 2030 roadmap and the ambition to maximize our alternative fuel as well as alternative raw materials with the primary focus to reduce our CO2 emissions, we are dependent on the suppliers whom provide these alternative sources, be it end-of-life tires or dried sewage sludge. Anticipating that the demand for alternative fuels will increase in the medium term, we take our strategic decisions in this area in the direction of securing our supply processes. Therefore our strategy is to diversify our suppliers and procure these alternative sources in full (and in the future increased) capacity. We take a number of measures to do so, one of the recent ones being the decision to use waste oil in Büyükçekmece Plant and conducting the necessary action plan, including supplier planning. On the other hand we have implemented and planned CAPEX to increase our alternative fuel usage in Çanakkale Plant. Our strategy is to make long-term agreements with key suppliers. It is also among our goals to carry out activities to increase the resilience of our suppliers against climate change. Within the scope of our 2030 targets, we aim to include climate-related audits in supplier evaluation processes.</p>
Investment in R&D	Yes	<p>As part of our low carbon roadmap and 2030 sustainability targets we aim to continuously reduce the clinker ratio in our products via cementitious products as well as value-added products with lower carbon footprint or with higher lifetime or enhanced performance parameters to enable lowering the emissions arising during use phase. In order to do so, our short-medium term strategic focus is to conduct continuous R&D projects with dedicated annual budgets to achieve our targets. Our special low-carbon products include cement</p>

		and concrete products with high mineral additives and durability. In addition, new product development studies continue, and project studies continue for cement and concrete products with a lower clinker ratio through the use of construction demolition wastes or different mineral or chemical additives. In addition to the R&D projects we carry out to improve product diversity and develop low-carbon products, we also created an R&D roadmap for the development of new technologies and determined our projects that we plan to implement until 2030. All projects in R&D Roadmap are projects for the transition to a low carbon economy. Beyond that, project groups are formed to research and implement technologies such as CCUS, which stand out and develop for decarbonization with the support of Sabancı Holding since in the long term, sectoral approaches pointed out CCUS technologies will be essential for decarbonization of the industry.
Operations	Yes	One of the main climate-related risks arising from our operations is the resulting CO2 emissions. In line with our our low carbon strategy in the medium term, covering 2020-2030 period, we target to use more alternative fuels and biomass in our fuel mix to substitute fossil fuels. We also aim to increase our energy efficiency and to decrease specific heat consumption at rotary kilns. All these measures taken in operations to decrease carbon emissions. Our strategy is to dedicate a budget for increased use of alternative fuels as well as investing in energy efficient measures. Our strategic approach influenced the business decision made to increase alternative fuel usage capacity at Büyükçekmece and Çanakkale plants in the reporting period.

C3.4

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

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs	From capital expenditure point of view; we need to be prepared for the low carbon future proactively. Hence we invest from today to use more alternative fuels and biomass in rotary kilns and dedicate a CAPEX budget accordingly. Over the recent years we have invested for

<p>Capital expenditures Capital allocation Access to capital Assets</p>	<p>appropriate storing, handling, conveying and feeding systems for dried sewage sludge (DSS), waste oil, shredded tires (TDF) and refused drive fuels (RDF). Moreover we are developing low carbon products and this requires a series of investments in terms of R&D investments and investments in the production lines such as alternative raw material feeding and storage systems etc. We have approved CAPEX plans for new product developments inline with our product switching plan. Time horizon for CAPEX planning is short to medium. From revenues point of view; utilizing more alternative fuels and alternative raw materials lowers costs and therefore brings cost advantage to company, leading to increase in revenues. With the prediction that the low carbon product demand of the market will increase in the medium term, more income will be obtained by producing low carbon products. From direct costs point of view; utilizing more alternative fuels which substitute conventional fossil fuels like coal and petcoke leads to a decrease in the direct costs. From capital allocation point of view; utilizing more alternative fuels rather than conventional fossil fuels like coal and petcoke helps to maintain better capital allocation due to improvement in the cash flow. From indirect costs point of view; by using alternative fuels at lower costs in comparison to the conventional fossil fuels, we decrease our indirect operating costs. From access to capital point of view; awareness in the climate-related risks and opportunities brings advantage to company in finding low interest rate capital and financial support from government or from alternative climate related funds for enabling such projects to drive carbon emission reduction. Climate-related risks have also impacted our financial planning: For example, evolving regulations and cap and trade plans such as the ETS will affect our financial planning regarding indirect costs in the short term. With an estimation and scenario model we estimated additional costs in the planned cap and trade plans up to 2030. These financial aspects are evaluated with 3-year company-wide strategic plan together with 5 and 10-year Master Plans to take necessary actions to manage the financial impacts arising from climate-related risks and opportunities.</p>
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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

Year target was set

2020

Target coverage

Business activity

Scope(s)

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Intensity metric

Other, please specify

NET Kg of CO₂ per metric tons of Cementitous Product

Base year

2019

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

770

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

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

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

770

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

100

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

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

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

100

Target year

2030

Targeted reduction from base year (%)

15.71

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

649.033

% change anticipated in absolute Scope 1+2 emissions

4

% change anticipated in absolute Scope 3 emissions

0

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

753

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

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

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

753

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

14.0534195276

Target status in reporting year

Underway

Is this a science-based target?

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

Target ambition

Please explain target coverage and identify any exclusions

In 2020, targets of 2030 has taken place as NET Kg of CO2 per metric tons of Cementitious Product.

2030 Ambition is to reduce NET kg CO2 emitted by approx. 15.7% and to reach 649 kg CO2/Cementitious Products

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

As a part of 2030 Sustainability Targets we aim to reduce specific net CO2 emissions to 649 kg per metric tons of cementitious material. In order to achieve this target during the reporting year we have developed a CO2 Roadmap to achieve the emission target by 2030. The roadmap includes all investment plans, production figures, alternative fuel usage, product switching and clinker usage ratio. Alternative fuel usage rates were increased with the investments made in the reporting period. We are moving towards achieving our goal. The progress of the target is closely followed by the Board of Directors.

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

C4.2

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

Target(s) to increase low-carbon energy consumption or production
Other climate-related target(s)

C4.2a

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

Target reference number

Low 1

Year target was set

2020

Target coverage

Business activity

Target type: energy carrier

Other, please specify
Alternative Fuel Rate

Target type: activity

Consumption

Target type: energy source

Low-carbon energy source(s)

Base year

2019

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

962,642

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

14.1

Target year

2030

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

35

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

19.1

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

23.9234449761

Target status in reporting year

Underway

Is this target part of an emissions target?

Yes

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

This target covers all our clinker and cement integrated production facilities (Akçansa Büyükçekmece, Çanakkale and Ladik Plants)

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

As part of our 2030 Sustainability Targets, we aim to increase the use of alternative fuels, one of our most important levers for emission reduction, from 14.1% in 2019 to 35% by 2030. In this context, we have created a comprehensive CO2 Roadmap that includes investments that will provide more alternative fuel to the rotary kilns, as well as optimization, digitalization and modernization investments that will provide more efficient

process conditions, and we are building our business strategy according to this roadmap.

List the actions which contributed most to achieving this target

Target reference number

Low 2

Year target was set

2020

Target coverage

Business activity

Target type: energy carrier

Other, please specify

Biomass utilization rate %

Target type: activity

Consumption

Target type: energy source

Low-carbon energy source(s)

Base year

2019

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

206,890

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

5.6

Target year

2030

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

12.3

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

9.47

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

57.7611940299

Target status in reporting year

Underway

Is this target part of an emissions target?

Yes

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

This target covers all our clinker and cement integrated production facilities (Akçansa Büyükçekmece, Çanakkale and Ladik Plants)

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

As part of our 2030 Sustainability Targets, we aim to increase the use of high biomass content alternative fuels which is one of our most important levers for emission reduction. We aim to increase biomass content of the alternative fuels we use from 5.6% in 2019 to 12.3% by 2030. In this context, we are developing strategic business partnerships for the use of alternative fuels with higher biomass ratio. Moreover, cooperation have been developed with municipalities and public institutions in order to recycle fuels with high biomass ratio derived from wastes to the economy.

List the actions which contributed most to achieving this target

Target reference number

Low 3

Year target was set

2019

Target coverage

Site/facility

Target type: energy carrier

Other, please specify

Green Energy - WHRS + Renewable Energy

Target type: activity

Production

Target type: energy source

Low-carbon energy source(s)

Base year

2019

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

93.429

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

13

Target year

2030

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

22.2

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

14.2

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

13.0434782609

Target status in reporting year

New

Is this target part of an emissions target?

This target is for reduction in Scope 2 emissions. We are planning to set a Scope 2 reduction target within 2 years.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

This target covers all our clinker and cement integrated production facilities (Akçansa Büyükçekmece, Çanakkale and Ladik Plants)

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

As part of our 2030 Sustainability Targets, we aim to increase the use of low carbon and renewable energy resources for electricity generation. We aim to increase low carbon and renewable energy usage from 13% in 2019 to 22.2% by 2030. In this context, we are planning new investments and purchasing green electricity from suppliers who own certificates of origin such as I-REC.

List the actions which contributed most to achieving this target

C4.2b

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

Target reference number

Oth 1

Year target was set

2019

Target coverage

Product level

Target type: absolute or intensity

Absolute

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

Resource consumption or efficiency

Other, please specify

Tons of clinker consumed in concrete products

Target denominator (intensity targets only)

Base year

2019

Figure or percentage in base year

257.1

Target year

2030

Figure or percentage in target year

200

Figure or percentage in reporting year

247

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

17.6882661996

Target status in reporting year

Underway

Is this target part of an emissions target?

Main emission source in cement production is clinker production. By decreasing the amount of clinker used in cement and concrete products, total emissions caused by clinker production decreases. With this target we aim to reduce our cement usage in concrete products resulting in decreased amount of clinker in concrete. By this way, we aim to reduce our production rates and total emissions caused by cement clinker production.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

Target covers all concrete products.

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

By using mineral additives, chemical additives, alternative materials (such as waste) and other recycled materials in concrete production, we aim to decrease cement usage in concrete products. By decreasing amount of cement used in concrete products, total usage of clinker decreases.

List the actions which contributed most to achieving this target

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*	12	192,258
Implementation commenced*	2	36,320
Implemented*	7	50,082
Not to be implemented	0	0

C4.3b

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

Initiative category & Initiative type

Low-carbon energy generation
Other, please specify
Alternative Fuels

Estimated annual CO2e savings (metric tonnes CO2e)

17,935

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

Scope 1

Voluntary/Mandatory

Voluntary

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

4,049,502

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

4,901,750

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

We use waste materials as alternatives to fossil fuels in the production of cement. This reduces our CO2 emissions, because the biomass content of the alternative fuel mix is classified as climate neutral. In 2021, we significantly increased the rate of alternative fuels in by various investments such as installation of tyre feeding system to Canakkale Plant Line 1.

Initiative category & Initiative type

Low-carbon energy generation
Other, please specify
Alternative Fuels

Estimated annual CO2e savings (metric tonnes CO2e)

25,295

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

Scope 1

Voluntary/Mandatory

Voluntary

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

1,742,440

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

674,751

Payback period

<1 year

Estimated lifetime of the initiative

16-20 years

Comment

We use waste materials as alternatives to fossil fuels in the production of cement. This reduces our CO2 emissions, because the biomass content of the alternative fuel mix is classified as climate neutral. In 2021, we significantly increased the rate of alternative fuels in by various investments such as improvement of dried sewage sludge system in Büyükçekmece Plant.

Initiative category & Initiative type

Energy efficiency in production processes
Motors and drives

Estimated annual CO2e savings (metric tonnes CO2e)

281.61

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

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

592,800

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

10,000

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Capacity Increase of Cement Mill Separator Main Drive Motor in Büyükçekmece Plant: To meet the quality demands this separator main drive motors capacity needed to be increased. This project includes purchasing of a 160kW AC motor with same properties. The new motor have nominal current around 280A, and this satisfied the separator load that was desired.

Initiative category & Initiative type

Energy efficiency in production processes
Machine/equipment replacement

Estimated annual CO2e savings (metric tonnes CO2e)

105.73

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

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

294,288

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

480,000

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Modification of Raw Material Bunker Of Raw Mill#2 in Büyükçekmece Plant: The shape of the bunker is the main problem of raw material extracting whereas the building material also affects this operation as well. By installing circular shape steel silo which can fit into the concrete bunker the raw material extracting problems are supposed to be ended. By this project, failures were decreased resulting in efficient processes and CO2 saving.

Initiative category & Initiative type

Energy efficiency in production processes
Automation

Estimated annual CO2e savings (metric tonnes CO2e)

6,316.95

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

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

850,000

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

1,200,000

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

Expert optimizer for kiln#1 in Çanakkale Plant: Full automatic control of kiln system with special software for autonomous production.

Initiative category & Initiative type

Energy efficiency in buildings
Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

38.99

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

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

150,000

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

500,000

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

High Efficiency Lighting: Replacing sodium vapor lamps with LED lamps in Çanakkale Plant buildings.

Initiative category & Initiative type

Energy efficiency in production processes
Automation

Estimated annual CO2e savings (metric tonnes CO2e)

108.31

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

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

148,035

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

400,000

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

Automatic Operation of Raw Meal Storage Discharging belt in Ladik Plant: Decreasing segregation and increasing homogenization of raw meal by automatic travelling operation of discharging belt and decreasing the power consumption of raw mill.

C4.3c

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

Method	Comment
Dedicated budget for low-carbon product R&D	As a solution to mitigate CO2 emissions, developing low-carbon products which constitutes less clinker in cement with more mineral or secondary additives (such as blast furnace slag) is critical. Hence, our R&D works continue both for sustainable products and alternative cementitious products. We keep doing synergic and coordinative works with Sabancı University to develop low carbon alternative cementitious products.
Employee engagement	Operational excellence is very much critical in reaching operational targets of a company. To mitigate CO2 emissions increasing alternative fuel and biomass rate and increase energy efficiency are two critical issues. These targets are achieved with the engagement of employee since it is very critical to monitor the process conditions. Alternative fuels and biomass input to the rotary kiln change the process parameters which needs special care and actions in case of fluctuations. Therefore, it is a key issue to train employee and increase their awareness to mitigate CO2, assign them technical KPIs and give award when targets are achieved. Technical trainings on decarbonization was planned for the upcoming period during the reporting year. Additionally a decarbonization project has been started.
Dedicated budget for other emissions reduction activities	Implementing ISO standards is another method we use. Akçansa plants takes benefit of having both ISO 14001 Environmental Management Standard and ISO 50001 Energy Management Standard. The former includes monitoring, controlling and calculating CO2 emissions taking measures to mitigate it through alternative fuels and biomass. The latter, on the other hand, includes monitoring, controlling energy consumptions, energy base lines, critical energy consuming units etc. It requires regular check, taking required measures etc. So implementing and effective management of standards are very much

	supportive to mitigate CO2 emissions. Additionally energy audits are carried out and the necessary improvement and efficiency projects are determined as the final output and implemented.
--	--

C4.5

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

Yes

C4.5a

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

Level of aggregation

Group of products or services

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

The EU Taxonomy for environmentally sustainable economic activities

Type of product(s) or service(s)

Cement and concrete

Other, please specify

Cement

Description of product(s) or service(s)

We have classified our cement products also considering the EU taxonomy and other taxonomies. It was defined that if the cement product have a clinker ratio between 50%-65% which is much more lower than the conventional Portland Cement, it is classified as "low-carbon product". Beyond, if the cement product have a clinker ratio between 65%-80%, it is classified as "climate-friendly product". Finally if the cement product have a clinker ratio between 80%-95% and also have additional sustainable benefits, it is classified as "environmentally-friendly product". The rest are classified as "conventional products".

Our low-carbon product ActionCem (CEM IV/B (P) 32.5 N-LH/SR; CEM II/B-LL 32.5 N; CEM II/B-M (P-LL) 32.5 N); Contains 35-50% mineral additives. It contributes to the reduction of greenhouse gas emissions with its low clinker ratio and low carbon footprint.

Our "climate-friendly product" SOLIDCEM (CEM IV/A-P 42.5 N-SR) contains 21-35% mineral additive. It is climate and environment friendly as it causes 15% less greenhouse gas emissions in its production.

DUOCEM (CEM II/A-LL 42.5R) is classified as "environmentally-friendly product" and has a carbon footprint of 10% less than Portland cement, thanks to its mineral additive content of up to 20%. With this feature, DUOCEM is both a building-friendly product and an environmentally friendly cement that supports greenhouse gas reduction.

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

No

Methodology used to calculate avoided emissions

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

Functional unit used

Reference product/service or baseline scenario used

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

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

Explain your calculation of avoided emissions, including any assumptions

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

10.07

Level of aggregation

Product or service

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

The EU Taxonomy for environmentally sustainable economic activities

Type of product(s) or service(s)

Cement and concrete

Other, please specify

Concrete

Description of product(s) or service(s)

Our Green Concrete product "Yeşilşap" has up to 35% lower CO2 footprint thanks to the special mineral-added cements used in its production. By air entraining 25 percent by volume, it becomes 25 percent lighter than traditional screeds and contributes to thermal insulation in buildings. Its insulation feature supports energy efficiency in its use in buildings. Yeşilşap, which has a positive contribution to earthquake risk with its low unit weight, also helps to reduce labor costs in construction site applications.

Our another green concrete product A+BETON is the most suitable solution for Green Buildings, reducing carbon emissions by producing up to 70% Ground Blast Furnace Slag (GBFS) substitution instead of cement. It is the ideal concrete solution for durable, efficient and sustainable structures that are resistant to environmental effects.

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

No

Methodology used to calculate avoided emissions

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

Functional unit used

Reference product/service or baseline scenario used

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

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

Explain your calculation of avoided emissions, including any assumptions

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

3.6

C-CE4.9

(C-CE4.9) Disclose your organization's best available techniques as a percentage of Portland cement clinker production capacity.

Total production capacity coverage (%)
--

4+ cyclone preheating	100
Pre-calciner	65

C5. Emissions methodology

C5.1

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

No

C5.1a

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

Row 1

Has there been a structural change?

No

C5.1b

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

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in boundary	Ready mixed concrete business line emissions were included in the Scope 1 calculations of the reporting year.

C5.1c

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

	Base year recalculation	Base year emissions recalculation policy, including significance threshold
Row 1	No, because the impact does not meet our significance threshold	When the calculation made with the new boundary in which the ready mixed concrete business line is included, the calculation made without including this business line is compared, the difference corresponds to a figure of 0.2%, which deemed to be non-material. Thus, base year emissions were not recalculated. Yet the data for base year is not present. For calculation of scope 1 emissions from ready-mixed

	concrete business line fuel consumption within the boundary is considered.
--	--

C5.2

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

Scope 1

Base year start

January 1, 2010

Base year end

December 31, 2010

Base year emissions (metric tons CO₂e)

5,872,720

Comment

Emissions from our clinker and cement production. Major sources are calcination of limestone and use of fuels for combustion.

Scope 2 (location-based)

Base year start

January 1, 2010

Base year end

December 31, 2010

Base year emissions (metric tons CO₂e)

338,163

Comment

We consume electricity from the interconnected grid. Scope-2 emissions were calculated from our clinker and cement production. Reference factor is from IEA.

Scope 2 (market-based)

Base year start

January 1, 2010

Base year end

December 31, 2010

Base year emissions (metric tons CO₂e)

0

Comment

Akçansa consumes electricity from interconnected grid.

Scope 3 category 1: Purchased goods and services

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO₂e)

261,919

Comment

Cradle to gate emissions from purchased goods used in cement, aggregates and ready mix concrete production. Emissions includes raw materials (limestone, gypsum etc.), additives, purchased cement and purchased aggregates. Equipment and machinery was excluded since they are not material for this category. Quantities were extracted from online reporting systems. Emission factors used are from Ecoinvent LCA Database (IPCC 2013:climate change:GWP 100a).

Scope 3 category 2: Capital goods

Base year start

Base year end

Base year emissions (metric tons CO₂e)

Comment

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

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO₂e)

195,310

Comment

Includes well to tank emissions of fuels used at cement plants (kiln and non kiln fuels) and for aggregates and ready-mix concrete production and fuels purchased for transportation purposes.

Scope 3 category 4: Upstream transportation and distribution

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

49,569

Comment

Includes road and sea transportation of raw materials, additives admixtures for cement, aggregates and ready-mixed concrete business lines.

Scope 3 category 5: Waste generated in operations

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 6: Business travel

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

931.8

Comment

Domestic & International Flights & Car Rentals during business travels are included in business travel category.

Scope 3 category 7: Employee commuting

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

1,887.5

Comment

Emissions caused by employee shuttle service are included in this category of Scope 3 emissions.

Scope 3 category 8: Upstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 9: Downstream transportation and distribution

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

18,483

Comment

Refers to downstream transportation and distribution.

Scope 3 category 10: Processing of sold products

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

41,196

Comment

Emissions of processing clinker sold.

Scope 3 category 11: Use of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

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

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 13: Downstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 15: Investments

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.3

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

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

IEA CO2 Emissions from Fuel Combustion

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

ISO 14064-1

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

WBCSD: The Cement CO2 and Energy Protocol

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)

5,764,763

Comment

2021 total gross emissions (ton CO2e) from Büyükçekmece, Çanakkale and Ladik cement production plants and 26 ready-mixed concrete plants. Scope 1 emissions are verified via 3rd party verification body and given in the limited assurance report.

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

Akçansa consumes electricity from interconnected grid.

C6.3

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

Reporting year

Scope 2, location-based

282,151

Comment

Scope 2 emission figure includes cement business line (3 production plants), ready-mixed concrete business line, aggregates business line, ports-terminals and headquarters. Scope 2 emissions are verified via 3rd party verification body and given in the limited assurance report.

C6.4

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

No

C6.5

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

Purchased goods and services

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

261,919

Emissions calculation methodology

Hybrid method

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

100

Please explain

Cradle to gate emissions from purchased goods used in cement, aggregates and ready mix concrete production. Emissions includes raw materials (limestone, gypsum etc.), additives, purchased cement and purchased aggregates. Equipment and machinery was excluded since they are not material for this category. Quantities were extracted from online reporting systems. Emission factors used are from Ecoinvent LCA Database (IPCC 2013:climate change:GWP 100a).

Capital goods

Evaluation status

Not relevant, explanation provided

Please explain

Capital goods is not one of the material categories for cement industry as mentioned in Cement Sector Scope 3 GHG Accounting and Reporting Guidance issued by the WBCSD Cement Sustainability Initiative (now GCCA). Thus "capital goods" category is not calculated.

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

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

195,310

Emissions calculation methodology

Hybrid method

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

100

Please explain

Emissions from fuel-and-energy-related activities (not included in Scope 1 or 2) are calculated. Figure includes well to tank emissions of fuels used at cement plants (kiln and non kiln fuels) and for aggregates and ready-mix concrete production and fuels purchased for transportation purposes. Consumption amounts of fuels were extracted from internal reports. 2021 DEFRA GHG Conversion Factors were used for calculations except lignite. For lignite Ecoinvent LCA Database (IPCC 2013:climate change:GWP 100a) was used.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

49,569

Emissions calculation methodology

Hybrid method

Fuel-based method

Distance-based method

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

100

Please explain

Includes road and sea transportation of raw materials, additives admixtures for cement, aggregates and ready-mixed concrete business lines. Fuel based method was used

where the data is available. Otherwise, distance based method was used. 2021 DEFRA GHG Conversion Factors were used for calculations. For Road, heavy goods vehicle (All HGV), 100% Laden, emission figures were used. For Sea, Cargo ship - Bulk carrier (60,000–99,999 dwt) emission figures were used.

Waste generated in operations

Evaluation status

Not relevant, explanation provided

Please explain

Waste generated in operations is insignificant, as confirmed in the Cement Sector Scope 3 GHG Accounting and Reporting Guidance issued by the WBCSD Cement Sustainability Initiative (GCCA). In our cement kilns, we recover the waste from all the operations and furthermore use waste from other industries as an alternative resource such as fuel or raw material.

Business travel

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

1,066.28

Emissions calculation methodology

Hybrid method
Fuel-based method
Distance-based method

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

100

Please explain

Domestic & International Flights & Car Rentals during business travels are included in business travel category. Mobile Combustion GHG Emissions Calculation Tool Version 2.6 of the GHG Protocol was used. The activity data is provided from our service provider. Emissions from business travel are verified via 3rd party verification body and given in the limited assurance report under scope 3 emissions.

Employee commuting

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

434.25

Emissions calculation methodology

Hybrid method
Fuel-based method
Distance-based method

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

100

Please explain

Emissions caused by employee shuttle service are included in this category of Scope 3 emissions. Due to COVID-19 pandemic and remote working, there is a significant decrease in emissions from employee commuting. Emissions from employee commuting are verified via 3rd party verification body and given in the limited assurance report under scope 3 emissions.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

We don't have upstream leased assets.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

18,483

Emissions calculation methodology

Hybrid method
Fuel-based method
Distance-based method

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

100

Please explain

Refers to downstream transportation and distribution. This data includes; Road transportation of aggregates sales, road transportation of cement sales, water (sea) transportation of cement sales, road transportation of concrete sales. For Road, heavy goods vehicle (All HGV), 100% Laden, emission figures were used. For Sea, Cargo ship - Bulk carrier (60,000–99,999 dwt) emission figures were used. 2021 DEFRA GHG Conversion Factors were used for calculations.

Processing of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

41,196

Emissions calculation methodology

Hybrid method

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

100

Please explain

Emissions of processing clinker is calculated from total emissions from electricity consumption + total emissions of other services (transportation, packaging, etc.). Emission Factor of processing clinker (kgCO₂/ton of clinker) is calculated as (EF of Electricity (kgCO₂/ton of cement) + EF of other services (kgCO₂/ton of cement)) ÷ Ton of Clinker needed per Ton of cement)

Use of sold products

Evaluation status

Not relevant, explanation provided

Please explain

According to the Cement Sector Scope 3 GHG Accounting and Reporting Guidance issued by the WBCSD Cement Sustainability Initiative (now GCCA), this category is not relevant to the cement sector

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Please explain

According to the Cement Sector Scope 3 GHG Accounting and Reporting Guidance issued by the WBCSD Cement Sustainability Initiative (now GCCA), this category is not relevant to the cement sector.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

No downstream leased assets.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

Akçansa does not have any franchises.

Investments

Evaluation status

Not relevant, explanation provided

Please explain

No additional investments made during the reporting period to be evaluated under Scope 3.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Please explain

No other upstream Scope 3 emissions sources identified within the boundary.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

No other downstream Scope 3 emissions sources identified within the boundary.

C6.7

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

Yes

C6.7a

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

	CO ₂ emissions from biogenic carbon (metric tons CO ₂)	Comment
Row 1	161,567	Total CO ₂ emissions from biomass sources in alternative fuels; Büyükçekmece Plant: 86,473 Ton CO ₂

		Çanakkale Plant: 62,240 Ton CO2 Ladik Plant: 12,854 Ton CO2
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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

0.0021

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

6,046,913.99

Metric denominator

unit total revenue

Metric denominator: Unit total

2,871,403,785

Scope 2 figure used

Location-based

% change from previous year

30.3

Direction of change

Decreased

Reason for change

Intensity figure indicates 2.1 kg CO2 emissions per TL revenue. In 2020, this figure was 3.02 kg CO2/TL revenue. Total revenue in 2020 was 1,967,108,077 TL. Increase in total revenue is 46%. In 2020 total Scope 1 and Scope 2 emissions figure was 5,943,190. Increase in Scope 1 + Scope 2 emissions is 1.7%. Despite many initiatives such as alternative fuel projects and energy efficiency projects for CO2 reduction in 2020, emissions have increased due to the change in the emission factors of the raw materials and fuels used in the total emission calculation since Emission Factors are calculated periodically according to Laboratory results instead of using constant values from IPCC guidance. Depending on the quality of fuels and alternative fuels (including biomass content), raw materials, fluctuations occurs in EF's and its directly effecting the final CO2 value. Revenue increased in 2021 with the increase in sales after slowing down of COVID-19 pandemic and the additional exchange rate effect which results with a decrease in the final figure.

C-CE6.11

(C-CE6.11) State your organization's Scope 1 and Scope 2 emissions intensities related to cement production activities.

	Gross Scope 1 emissions intensity, metric tons CO ₂ e per metric ton	Net Scope 1 emissions intensity, metric tons CO ₂ e per metric ton	Scope 2, location-based emissions intensity, metric tons CO ₂ e per metric ton
Clinker	0.859	0.822	0.042
Cement equivalent	0.769	0.736	0.038
Cementitious products	0.786	0.753	0.039
Low-CO ₂ materials	6.25	5.98	0.306

C7. Emissions breakdowns

C7.1

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

No

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO ₂ e)
Turkey	5,764,763



¹Scope 1 Emissions include emissions from Büyükçekmece, Çanakkale and Ladik cement plants and emissions from ready-mixed plants.

C7.3

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

By facility

By activity

C7.3b

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

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Büyükçekmece Plant	1,674,343	41.0118	28.3327
Çanakkale Plant	3,561,613	39.5156	26.1439
Ladik Plant	517,051	40.5607	35.5306
Ready Mixed Concrete Plants (Including 26 Ready-Mix Concrete Plants - management office coordinates were given as reference)	11,755	40.9842	29.0995

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Cement Production (Including 3 cement production plants located in İstanbul-Büyükçekmece, Çanakkale and Samsun-Ladik)	5,753,008
Ready-Mixed Concrete Production	11,755

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

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

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	5,753,008	5,518,753	Gross= Conventional Fuel + Alternative Fuel Net = Conventional Fuel NET CO2 data by Locations; Büyükçekmece : 1.614.371 Ton CO2 Canakkale: 3.410.502 Ton CO2 Ladik: 482.125 Ton CO2 RMC: 11.755 Ton CO2

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Turkey	282,151	

C7.6

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

By facility

C7.6b

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

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Büyükçekmece Plant	101,144	
Çanakkale Plant	144,971	
Ladik Plant	34,221	
Ready-mixed concrete plants	102	
Terminals/Ports	1,306	
Head-office	35	
Aggregates	371	

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

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

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	280,336		Total of Büyükçekmece, Çanakkale, Ladik Cement Plants

C7.9

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

Increased

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	3,413.63	Increased	0.0574	Combined Scope 1 + 2 emissions amounted to 5,943,190.00 metric tons CO2 in 2020 (previous reporting year). In 2020 renewable energy consumption was 94,519 MWh. During the reporting year, renewable energy consumption declined to 86,955 MWh due to longer periodical overhaul times. The total difference in terms of MWh is 7,564. Change in emissions due to higher non-renewable electricity consumption represents 0.0574% of total Scope 1 and Scope 2 emissions.
Other emissions reduction activities	21,076	Decreased	0.35	Combined Scope 1 + 2 emissions amounted to 5,943,190.00 metric tons CO2 in 2020 (previous reporting year). Total Alternative Fuel usage and biomass content of these alternative fuels were increased during the reporting period. The savings come from the proportion of biomass in alternative fuels used as part of our emission reduction activities. Biomass is classified as climate neutral. With other emission reduction activities such as energy efficiency and the increased use of alternative fuels Total emission saving from alternative fuel usage and biomass content in all of the cement

				production plants represents 0.35% of our total previous years Scope 1 and Scope 2 emissions.
Divestment	0	No change	0	No divestment within the boundary during the reporting year.
Acquisitions	0	No change	0	No acquisitions within the boundary during the reporting year.
Mergers	0	No change	0	No mergers within the boundary during the reporting year.
Change in output	11,544.48	Increased	0.19	Combined Scope 1 + 2 emissions amounted to 5,943,190.00 metric tons CO ₂ in 2020 (previous reporting year). In the reporting period clinker production declined 13,340 tons from 6,711,570 tons to 6,698,230 tons that correspond to 11,457.52 tons of CO ₂ since Specific Gross Emission is 0.859 ton CO ₂ /ton clinker. During the reporting period, cement production increased 914,332.6 tons that correspond to 23,002 tons of CO ₂ . The increase in CO ₂ is calculated by using the activity data as additional energy consumption (50,969.1 MWh) for cement production. Total change in clinker production and cement production resulted and increase of 11,544.48 tons of CO ₂ that represents 0.19% of 2020 total Scope 1 and Scope 2 emissions.
Change in methodology	0	No change	0	No change in the methodology in the reporting year.
Change in boundary	11,755	Increased	0.1978	Scope 1 emissions from ready mixed concrete business line which is 11,755 tons, was added to the calculations for the reporting period. Increase in emissions corresponds to 0.1978% of 2020 total Scope 1 and Scope 2 emissions.
Change in physical operating conditions	0	No change	0	No change in the physical operating conditions in the reporting year.
Unidentified	0	No change	0	N/A

Other	98,086.85	Increased	1.6504	<p>Change in emission factors: Every year, in compliance with Turkish Monitoring, Reporting and Verification system of GHG emissions, the weighted average of annual emission factors which are calculated from laboratory results of fuel/alternative fuels are used as part of our annual Scope 1 calculations. This brings a certain change in emission factor on a yearly basis. So that, the largest emission variation might be caused by this update in the emission factors. Between 2020 and 2021 the emissions were increased by 88,326 metric tons of CO₂ due to emission factor changes. One of the biggest changes occurred in raw meal emission factor caused by difference in material composition. This change resulted 3 kg increase in the emission factor per ton of clinker. On the other hand, emission factors of fuels and alternative fuels were also increased. Changes were recorded as follows; for Petroleum coke 2.9 kg increase, for coal 2.1 kg increase, for lignite 4.8 kg increase, for waste oil 17,9 kg increase and for dried sewage sludge 4.2 kg increase per ton of clinker. This changes were caused by variations in parameters such as moisture, calories, organic carbons etc.</p> <p>Combined Scope 1 + 2 emissions amounted to 5,943,190.00 metric tons CO₂ in 2020 (previous reporting year). Increase caused by emission factor changes is 88,326 metric tons of CO₂ that correspond to 1.4862% of 2020 total Scope 1 and Scope 2 emissions. In 2021, the use of coal and petroleum coke in the total fuel mix has changed. The remaining increased amount of 9,760.85 tons of CO₂ that correspond to 0.1642% of 2020 total Scope 1 and</p>
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				Scope 2 emissions, is caused by this change in fuel mix.
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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 40% but less than or equal to 45%

C8.2

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

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

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	476,115	6,284,495	6,760,610
Consumption of purchased or acquired electricity		0	618,351	618,351
Consumption of self-generated non-fuel renewable energy		6,846		6,846
Total energy consumption		482,961	6,902,846	7,385,807

C-CE8.2a

(C-CE8.2a) Report your organization's energy consumption totals (excluding feedstocks) for cement production activities in MWh.

	Heating value	Total MWh
Consumption of fuel (excluding feedstocks)	LHV (lower heating value)	6,760,610
Consumption of purchased or acquired electricity		614,328
Total energy consumption		7,374,938

C8.2b

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

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

C8.2c

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

Sustainable biomass

Heating value

LHV

Total fuel MWh consumed by the organization

0

Comment

Energy is not yet obtained from sustainable biomass

Other biomass

Heating value

LHV

Total fuel MWh consumed by the organization

476,115

Comment

Includes domestic dried sewage sludge, wood derived fuels, agricultural waste, waste tires (TDF) (27% biomass), refused derived fuel (RDF) (71% biomass) as alternative fuel sources.

Other renewable fuels (e.g. renewable hydrogen)

Heating value

Total fuel MWh consumed by the organization

0

Comment

Energy is not yet obtained from other renewable fuels

Coal

Heating value

LHV

Total fuel MWh consumed by the organization

2,837,245

Comment

Includes imported steam-coal, local anthracite coal, lignite consumption.

Oil

Heating value

LHV

Total fuel MWh consumed by the organization

10,278

Comment

Includes heavy fuel consumption

Gas

Heating value

LHV

Total fuel MWh consumed by the organization

3,611

Comment

Includes natural gas consumption.

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

Heating value

LHV

Total fuel MWh consumed by the organization

3,433,361

Comment

Includes petroleum coke consumption, waste oil, waste tires (excluding biomass content), refused derived fuel (RDF) (excluding biomass content), mixed industrial waste as alternative fuel sources.

Total fuel

Heating value

LHV

Total fuel MWh consumed by the organization

6,760,610

Comment

Total consumption of conventional fossil fuels and alternative fuels

C-CE8.2c

(C-CE8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel for cement production activities.

Sustainable biomass

Heating value

LHV

Total MWh fuel consumed for cement production activities

0

MWh fuel consumed at the kiln

0

MWh fuel consumed for the generation of heat that is not used in the kiln

0

Other biomass

Heating value

LHV

Total MWh fuel consumed for cement production activities

476,115

MWh fuel consumed at the kiln

476,115

MWh fuel consumed for the generation of heat that is not used in the kiln

0

Other renewable fuels (e.g. renewable hydrogen)

Heating value

Total MWh fuel consumed for cement production activities

0

MWh fuel consumed at the kiln

0

MWh fuel consumed for the generation of heat that is not used in the kiln

0

Coal

Heating value

LHV

Total MWh fuel consumed for cement production activities

2,837,245

MWh fuel consumed at the kiln

2,837,245

MWh fuel consumed for the generation of heat that is not used in the kiln

0

Oil

Heating value

LHV

Total MWh fuel consumed for cement production activities

10,278

MWh fuel consumed at the kiln

10,278

MWh fuel consumed for the generation of heat that is not used in the kiln

0

Gas

Heating value

LHV

Total MWh fuel consumed for cement production activities

3,611

MWh fuel consumed at the kiln

3,611

MWh fuel consumed for the generation of heat that is not used in the kiln

0

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

Heating value

LHV

Total MWh fuel consumed for cement production activities

3,433,361

MWh fuel consumed at the kiln

3,433,361

MWh fuel consumed for the generation of heat that is not used in the kiln

0

Total fuel

Heating value

LHV

Total MWh fuel consumed for cement production activities

6,760,610

MWh fuel consumed at the kiln

6,760,610

MWh fuel consumed for the generation of heat that is not used in the kiln

0

C8.2d

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	86,955	86,955	6,846	6,846
Heat	6,760,610	6,760,610	476,115	476,115
Steam	0	0	0	0
Cooling	0	0	0	0

C-CE8.2d

(C-CE8.2d) Provide details on the electricity and heat your organization has generated and consumed for cement production activities.

	Total gross generation (MWh) inside the cement sector boundary	Generation that is consumed (MWh) inside the cement sector boundary
Electricity	86,955	86,955
Heat	6,760,610	6,760,610
Steam	0	0

C8.2g

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

Country/area

Turkey

Consumption of electricity (MWh)

625,196.82

Consumption of heat, steam, and cooling (MWh)

0

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

625,196.82

C9. Additional metrics

C9.1

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

Description

Waste

Metric value

234,087

Metric numerator

Tons of Waste Used as Alternative Fuel

Metric denominator (intensity metric only)

No intensity metric

% change from previous year

5.8

Direction of change

Increased

Please explain

Total tons of waste used as alternative fuel, increased by 5.8% during the reporting year in comparison with the previous year.

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

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

	Investment in low-carbon R&D	Comment
Row 1	Yes	A total budget of 1,205,000 TL is allocated to R&D activities. Akçansa's all R&D activities are completely focused on low-carbon products and services.

C-CE9.6a

(C-CE9.6a) Provide details of your organization's low-carbon investments for cement production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Low clinker cement	Applied research and development	81 - 100%	1,205,000	All R&D studies are done to decrease clinker ratio in our cement and concrete products.

C10. Verification

C10.1

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

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

C10.1a

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

Verification or assurance cycle in place

Annual process


Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 Akçansa_Limited_Assurance_Opinion_2021.pdf

Page/ section reference

Appendix -2: Akçansa 2021 Sustainability Data Table
Environmental Indicators
Scope 1, 2 ve 3 Emissions

Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

C10.1b

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

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process


Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 Akçansa_Limited_Assurance_Opinion_2021.pdf

Page/ section reference

Appendix -2: Akçansa 2021 Sustainability Data Table
Environmental Indicators
Scope 1, 2 ve 3 Emissions

Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

C10.1c

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

Scope 3 category

Scope 3: Business travel

Scope 3: Employee commuting

Verification or assurance cycle in place

Annual process


Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 Akçansa_Limited_Assurance_Opinion_2021.pdf

Page/section reference

Appendix -2: Akçansa 2021 Sustainability Data Table

Environmental Indicators

Scope 1, 2 ve 3 Emissions

Note that only Business Travel and Employee Commuting categories were verified.

Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

C10.2

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

In progress

C11. Carbon pricing

C11.1

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

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

C11.1d

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

Specifically, Turkey is planning market-based and/or other mechanisms to mitigate the carbon emissions. In order to comply with the regulation we anticipate being regulated by, we proactively take measures to lower our carbon emissions. As we outline in our 2030 Sustainability Roadmap, as well as in our strategy and vision, we are currently working towards low carbon production by ensuring the implementation of energy efficiency measures, increasing the use of alternative raw materials with lower carbon emissions during production phase, decreasing specific heat consumption at the rotary kilns and increasing alternative fuel including biomass ratio in our energy mix over the next 10 years. While making investment plans, the potential emission reduction amounts of all relevant investments are determined. Since the regulatory framework has not been clarified yet, risks are determined with different scenario analyzes. In this context, the expected carbon reduction rates with the investments are used in the scenario analysis, considering the future carbon pricing regulations.

For the longer future, the cement industry intensively works in possible deployment of Carbon Capture, Storage and Utilization technologies. We closely follow the R&D conducted in this area and if/when possible we can include it in our long-term Master plans in the future in order to secure our compliance with the anticipated regulation on carbon pricing/ETS.

In addition to our efforts to lower emissions as part of our direct operations, we also actively participate in policy engagement activities. There are two separate projects for the support and implementation phase of Turkey's transition to carbon pricing mechanisms. The first of these is the PMR (Partnership for Market Readiness) project, which was completed in 2021. As a result of the PMR project, a draft climate law was constructed and a draft regulation on the Emissions Trading System was devised. In line with the completion of the project and current developments such as the Green Deal and Carbon Border Adjustment Mechanism in the EU, and Turkey's ratification of the Paris Agreement, transition preparations have accelerated. The PMI (Partnership for Market Implementation) project, which is a continuation of the PMR project, is a for the implementation of the ETS. We follow policy and regulatory developments by actively participating in these projects. Sustainability Department have a critical role in the follow up of emerging regulations together with the Sustainability Committee. Sustainability Manager reports the developments regularly to Corporate Governance Committee.

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?

No, but we anticipate doing so in the next two years

C12. Engagement

C12.1

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

Yes, our suppliers

Yes, our customers/clients

Yes, other partners in the value chain

C12.1a

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

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Run an engagement campaign to educate suppliers about climate change

% of suppliers by number

3

% total procurement spend (direct and indirect)

10

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

Rationale for the coverage of your engagement

We do regularly provide sustainability trainings to sub-contractors and aim to increase their awareness and interest on climate-related issues and help them consider adapting low-carbon transition plans.

Impact of engagement, including measures of success

All sub-contractors and select critical suppliers receive environmental trainings including climate change issues.

Comment

In 2021, 1178 employee of sub-contractors were trained. Total number of subcontractors that were trained is 43.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Run an engagement campaign to educate suppliers about climate change

% of suppliers by number

3

% total procurement spend (direct and indirect)

10

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

Rationale for the coverage of your engagement

In order to increase awareness of sustainability, there are control parameters for environment and sustainability in supplier performance evaluation processes. In addition, within the scope of our 2030 sustainability goals, there is also a target to increase the rate of specific sustainability audits for suppliers. Another target of ours is to increase the rate of suppliers with certificates (ISO 14001, ISO 14064, ISO 50001 etc.) from 3% to 80%. We are working to encourage all our suppliers to obtain ISO certificates.

Impact of engagement, including measures of success

We monitor percentage of Suppliers and Contractors with ISO standards. For 2021, the percentage was 3%. Our target is to increase up to 80%. Another measure is the number of specific supplier sustainability audits per year. We aim to increase the audit number up to 150 per year.

Comment

Figure % of suppliers by number is calculated to the extent that information can be obtained from the suppliers. The process of information collection on certificates for all suppliers continues.

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

12.38

% total procurement spend (direct and indirect)

46.96

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

56

Rationale for the coverage of your engagement

Suppliers mean business-partners for Akçansa. Hence, we do care about their awareness on climate-related issues that can impact their businesses. We aim to help increasing our suppliers' awareness levels via numerous measures. Our subcontractor auction criteria for logistics services, for instance, includes environmental performance from which we expect low-emission vehicles (model and age criteria) should be selected for the work. We do regularly provide our subcontractors sustainability trainings and aim to increase their awareness and interest on climate-related issues and help them consider adapting low-carbon transition plans. We collect relevant information, where possible, such as fuel consumption, from our raw material and fuel suppliers to calculate our Scope 3 emissions.

Impact of engagement, including measures of success

We received positive feedback from all suppliers we engaged to. Some of them have started to implement projects to decrease their diesel-oil use in logistics through various precautions and actions. Some took actions to decrease their energy consumptions. We consider these outcomes a successful implementation of the supplier engagement.

Comment

Figure % of supplier-related Scope 3 emissions are estimated by proportioning the categories of Upstream Transportation and Fuel & Energy Related Activities and Purchased Good and Services.

C12.1b

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

Type of engagement & Details of engagement

Education/information sharing

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

% of customers by number

100

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

10.5

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

Akçansa continuously conducts information sharing and development studies with all its customers and approaches its customers as a solution partner. Akçansa, plans to convert its product portfolio to low-carbon products by 2030 without compromising the quality and performance of conventional cement products. Akçansa acts in cooperation with its customers at every stage of this work. During the new low-carbon product development phases, the customers are informed and trial studies are carried out in collaboration. During the trial studies, studies are carried out to increase the awareness of customers within the scope of combating climate change. In addition, Akçansa shares all its climate studies with all its stakeholders through sustainability reports. Moreover, we are actively involved in various NGOs to reach customers who use our products during the design and construction phases. The aim is to work collaboratively for sustainable construction and to make the design, construction and operation of buildings more sustainable. We build relationships with these partners because it creates market opportunities for us. Our communication channels with our customers include various meetings, workshops, seminars, annual and sustainability reports, social media platforms and one-to-one meetings. With all these tools, we share our 2030 Sustainability Goals and climate change targets to our customers specifically. Additionally we explain the product performances and application practices as well as the carbon footprint. In addition, we have prepared our self-environmental product declaration documents for 22 special products in order to share the effects of our products throughout their life cycles to our customers and end users transparently.

Impact of engagement, including measures of success

Customers are getting more interested in our low-carbon and sustainable products. We receive more and more information requests about Akçansa's climate-related activities. We usually inform our customers about our carbon footprint, EPD documents and our climate-related initiatives. In this context, we enable our customers to calculate their own carbon footprints and have a clear idea about the impacts of the products they use. Our measure of success is the increase in sales of low carbon/sustainable products. The percentage of revenue generated by sustainable products was around 13.67% in 2021.

C12.1d

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

Akçansa values climate-related engagement across its value chain. Akçansa is closely working with universities (ITU, Sabancı University, Hacettepe University, Çanakkale 18 Mart University etc.) and R&D institute TUBITAK to create and optimize low carbon product and resource efficiency solutions. In Çanakkale plant a pilot project named "Microalgae" has been developed in cooperation with "Çanakkale 18 Mart University" academicians. The project has been initiated with the laboratory studies and the pilot implementation has been invested in Akçansa

Çanakkale Plant. The algae cultures grown in the lab conditions are put in the ponds and then feed with the hot gas directly taken from the kiln stacks. The CO₂ in the flue gas feeds the algae until they become well stressed to harvest. The harvested microalgae are dried out and become a product as alternative fuel or used in salmon fishery and cosmetics industry. This pilot project proves kiln hot gas (containing CO₂) can be used to produce microalgae and to decrease CO₂ emissions from combustion.

Within the scope of another project carried out in cooperation with Yıldız Technical University and İstanbul-Büyükçekmece Municipality, we are investigating the usage of construction demolition waste (CDW) in ready-mixed concrete, cement production and filler applications. We also contributed to the literature as thesis studies of 2 master's and 2 undergraduate students. In the project, the CDW collected from the buildings in Büyükçekmece was crushed at the Akçansa Aggregate plants and brought to the Akçansa Büyükçekmece Cement Factory in order to examine whether it can be brought to an appropriate size (<5cm) and used as a raw material in cement production after the concrete tests are completed in the Betonsa Technology Center Laboratory. The CDW was also brought to an appropriate size to be used in the highway application as a filler. It was laid as the basic material of the 200 m long road open to traffic in Büyükçekmece district. Performance monitoring is ongoing.

Our long-term cooperation with municipalities continues within the scope of using wastewater treatment sludge as an alternative fuel.

We are actively involved in working groups and projects of the following NGOs on climate change and sustainability issues:

- ÇEVKO (Environmental protection foundation - sustainability and climate change working group)
- WBCSD Turkey (Circular economy, water and sustainability reporting working groups)
- TUSIAD (the Turkish Industry and Business Association - Environmental and sustainability working group)
- TKYD - (Turkish Corporate Governance Association - ESG Working Group)
- TÜRKÇİMENTO - (Turkish Cement Manufacturers Association - Environment and Climate Change Committee)
- TÜRKÇİMENTO - (Turkish Cement Manufacturers Association -Sustainability Working Group)
- IMSAD - (Association of Construction Material Producers - Sustainability Working Group)

We provide opinions in the regulatory changes, lobbying activities with relevant authorizes in order to new develop projects and involve in existing projects, work to raise awareness and knowledge about climate change and sustainability, and support the public through working groups activities, communications and reports etc. For example, we have been involved in a project named The Materials Marketplace, initiated by WBCSD Turkey, which aims to develop a network at which companies will be in contact with other to find ways to use one company's waste as another company's raw material while contributing to the "circular economy" model in Turkey. There is a cloud-based platform and traditional and non-traditional industrial waste streams are matched according to companies' need. This project leads to minimize the amount of waste sent to landfills, save the energy and optimize natural resource/energy consumption. We aim to engage with various stakeholders in our value chain to communicate our 2030

Sustainability Roadmap and aim to influence our value chain to take part in maximizing efforts to facilitate the transition to a low carbon economy.

C12.2

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

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

C12.2a

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

Climate-related requirement

Complying with regulatory requirements

Description of this climate related requirement

According to our supplier codes of conduct, while carrying out its activities, the supplier must show the necessary care and attention to the environment and will act in compliance with all applicable laws and regulations. All products and services to be provided must meet the environmental, quality and safety criteria specified in the relevant contract provisions and must be safe for their intended use. Akçansa does not work under any circumstances with suppliers that do not comply with supplier business ethics.

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

100

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

100

Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment

Supplier scorecard or rating

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

Exclude

C12.3

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

Row 1

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

Yes, we engage directly with policy makers

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

No, but we plan to have one in the next two years

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

We closely monitor the regulations directly and through associations and unions of which we are members, such as TÜSİAD, Türkçimento etc. We continuously give opinions in the working groups of these NGOs, especially within the scope of climate-related regulations. As working groups of these organizations, we directly support the authorities during the preparation of climate-related policies and legislation. Again, through these associations and unions, we continue to work on the preparation of position papers that reflect the views of the business world. We conduct representation at roundtable meetings, and support projects carried out by the governmental authorities upon requests.

C12.3a

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

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

Carbon tax
Emissions trading schemes

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

Climate Law and Carbon Pricing Regulations

Policy, law, or regulation geographic coverage

National

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

Turkey

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

Neutral

Description of engagement with policy makers

Akçansa supports carbon pricing mechanisms such as the emissions trading system. Turkey had been implementing Partnership for Market Readiness (PMR) project with the funding of WorldBank until 2021 which aimed at supporting Turkey's transition to a carbon pricing mechanism such as emissions trading system (ETS). Akçansa actively participated to all round table meetings and workshops and supported the Ministry of Environment, Urbanization and Climate Change during the program. After PMR, The Partnership for Market Implementation (PMI) project, which is the next step of PMR project and covers the studies for the implementation of ETS, continues. Akçansa actively participates to the necessary meetings in this project, expressing opinions and supporting the Ministry within the scope of its activities. It also provides opinions to institutions and organizations such as the Ministry of Commerce and the Ministry of Industry and Technology within the scope of the European Green Deal regulations that will have an impact on Turkey's climate policies. Akçansa also participates in studies such as impact analysis studies together with sector representatives. On the other hand, Akçansa offers its opinions and suggestions through various initiatives representing the business world and contributes to the development of climate policies. Akçansa also participated in the climate council meetings (GHG Reduction Commission, Carbon Pricing Commission, Green Finance Commission meetings) organized by the Ministry of Environment, Urbanization and Climate Change in 2022 and actively contributed to the draft recommendations for climate-related regulations.

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

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

Yes, we have evaluated, and it is aligned

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

Mandatory climate-related reporting

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

Turkish MRV regulation

Policy, law, or regulation geographic coverage

National

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

Turkey

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

Support with major exceptions

Description of engagement with policy makers

Akçansa actively engages in contributing in the emerging issuance of mandatory carbon reporting regulation which includes cement industry emission reporting. Akçansa environmental department participates in the consultation process and contributes in the preparation of the content of the reporting guideline, to ensure cement industry calculates and report in a correct method.

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

Based on, the Turkish MRV regulation, verification process has been done for every year. According to the Turkish MRV regulation, there is a verification process and verification should be done annually. The current mechanism has significant uncertainties. In order to address these uncertainties, technical and knowledge support is actively provided to the relevant ministries and regulatory institutions, together with sector representatives.

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

No, we have not evaluated

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, incorporating the TCFD recommendations

Status

Complete

Attach the document

 Sustainability_Principles_Compliance_Report.pdf

 akcansa-2021-faaliyet-raporu.pdf

Page/Section reference

Pages 60-67 (Sustainability Section) in annual report, (Faaliyet Raporu) which can be accessed via <http://www.akcansa.com.tr/docs/akcansa-2021-faaliyet-raporu.pdf>

Page 121-124 (Sustainability Principles Compliance Report) in the annual report which can be accessed via

http://www.akcansa.com.tr/docs/Sustainability_Principles_Compliance_Report.pdf

Content elements

Governance

Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

In accordance with the communiqué published by the CMB, it has become obligatory to disclose the sustainability progress within the scope of annual activity reports. Akçansa publishes the required sustainability principles compliance report which can also be accessed via

"http://www.akcansa.com.tr/docs/Sustainability_Principles_Compliance_Report.pdf" as a part of its Annual Report and links to its detailed sustainability report.


Publication

In voluntary sustainability report

Status

Complete

Attach the document

 Akcansa_2021_Surdurulebilirlik_Raporu.pdf

Page/Section reference

Page 39 (GHG Emissions section), Page 75 (GHG Emissions Breakdown), Pages between 16-20 (disclosures considering TCFD recommendations) in the sustainability report which can be accessed via <http://www.akcansa.com.tr/docs/akcansa-2021-surdurulebilirlik-raporu.pdf>

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Akçansa publishes annual sustainability reports since 2010. Climate related targets and performance, all environmental performance indicators including resource use and biodiversity are included in our sustainability report (Targets are given at pages 19 and 20). We are a supporter of the TCFD recommendations and in 2021 we started our assessments considering TCFD recommendations (pages between 16-20). Our climate governance structure, strategy, transition and physical risks and opportunities, emission

figures and other metrics are disclosed within our sustainability report. We also report our innovation and digitalization projects, details of climate related investments and initiatives as well as our efforts throughout our entire value chain. Beyond we also report our social performance indicators such as employee engagement, social investments and trainings. Sustainability report can be accessed via <http://www.akcansa.com.tr/docs/akcansa-2021-surdurulebilirlik-raporu.pdf>

C15. Biodiversity

C15.1

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

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity
Row 1	Yes, both board-level oversight and executive management-level responsibility	<p>Basic raw materials used in the cement production are directly supplied from natural resources. Natural resource consumption, land use, operating the quarry areas, water consumption, wastes, and noise due to cement production are the factors constituting an impact on biodiversity. Not causing any permanent negation on Biodiversity, which has a significant importance for the continuity of activities, the natural life, and the society, and even providing a positive contribution has been defined as a strategic priority by Akçansa and is listed among the Sustainability Targets 2030. Due to the prioritized areas related to corporate sustainability, Akçansa attaches importance to bring back and rehabilitate the raw material fields in order to reduce its impact on the nature as a result of natural resource use.</p> <p>Akçansa's targets and practices regarding biodiversity, which are considered within the scope of sustainability goals and a material issue in its sustainability strategy, are approved by the senior management team. Actions and target progresses determined by the Sustainability Committee are followed and monitored by the Sustainability Steering Committee led by CEO. In addition, progress in biodiversity targets is overseen by the Board, which is responsible for the oversight of sustainability issues. Actions and targets related to biodiversity are discussed at committee meetings and monitored at board level at least</p>

		once a year.
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C15.2

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

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Initiatives endorsed
Row 1	Yes, we have endorsed initiatives only	SDG

C15.3

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

	Does your organization assess the impact of its value chain on biodiversity?
Row 1	Yes, we assess impacts on biodiversity in our upstream value chain only

C15.4

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

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity-related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection Land/water management Species management Other, please specify Rehabilitation of quarry areas where production ended

C15.5

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

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No, we do not use indicators, but plan to within the next two years	Other, please specify Rehabilitated areas

C15.6

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

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Governance Impacts on biodiversity Details on biodiversity indicators Risks and opportunities Biodiversity strategy	Minimizing environmental impact caused by the land use is the basis of our practices for protection and development of biological diversity in our own fields of activity and mines. More information can be found in our Sustainability Report, page 44.

C16. Signoff

C-FI

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

Akçansa established its 2030 sustainability roadmap containing 36 KPIs to monitor its performance. One of the 6 pillars of this roadmap is reducing environmental footprint. Under this pillar, the main focus is reducing CO2 emissions. In order to achieve these targets, the process is monitored and approved by our Sustainability Steering Committee and Board of Directors and associated/necessary direct and indirect engagement actions are planned accordingly. Sustainability Steering Committee and the Sustainability Committee periodically review the progress as well as the Board level committees. The results are shared with the stakeholders through our sustainability report available on Akçansa web site. Our risks, opportunities and engagements are also monitored and maintained as consistent with our overall corporate as well as climate change strategy.

C16.1

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

	Job title	Corresponding job category
Row 1	General Manager	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

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

Please confirm below

I have read and accept the applicable Terms