# AKÇANSA ÇİMENTO SANAYİ VE TİCARET A.Ş. - Climate Change 2019

## C0. Introduction

### C0.1

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

Akcansa, a JV of Sabancı Holding and HeidelbergCement, is the leader of Turkish Cement industry. Company produces clinker and cement at 3 Facilities, ready-mixed concrete under “Betonsa” brand at 30 Facilities and aggregates under “Agregasa” brand in 4 Facilities. As the leader of the Turkish cement industry, Akçansa supplies 10% of Turkey’s cement demand and nearly 12% of the country’s total cement and clinker exports. Akçansa vision statement “Sustainable growth beyond all limits” reflects Company’s sustainability strategy which is in line with Company’s business strategy. 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. Our climate change strategy mainly focuses on mitigating CO2 through maximizing alternative fuels and biomass, decreasing rate of clinker in cement and increasing energy efficiency. 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. We are participatory of the UN Global Compact, UN Women’s Empowerment Principles, CDP Climate Change/Water programs and is the member of WBCSD Turkey. In 2018, sustainability management has been reorganised and Akçansa 2030 sustainability targets will be set and published in 2019. In the new sustainability management structure, Sustainability Working Committee (SWC) takes the key position to set corporate targets and to develop and implement projects. Being chaired by Deputy General Manager (DGM) of Operations Function who directly reports to General Manager (GM), it is composed of 6 pillars managed by relevant corporate managerial positions. Committee Members build Working Groups (WGs) or Task Forces (TFs) to develop and implement projects to maintain sustainability targets. SWC reports to Sustainability Steering Committee (SSC) which consists of Akçansa Executive Committee Members (GM and DGMs). Its main mission is to approve and follow up sustainability targets & relevant projects. And finally, SSC reports to Akçansa Board of Directors which is responsible of defining sustainability vision and strategy. In Board, Chairman is representing Sabancı Holding and Vice President is representing HeidelbergCement. Akçansa GM shares key sustainability KPIs and relevant ongoing projects to Board regularly. From setting up of sustainability strategy to follow up targets and approval of investment budgets, SSC and Board of Directors directly own the whole process. The climate-related targets (alternative fuel rate and energy efficiency KPIs) are defined by Deputy GM-Operations, Facility Managers and Raw Materials & Environmental Manager (RMEM), both are direct reports of Deputy GM-Operations. RMEM is Head of “Reducing Environmental Footprint” pillar in SWC. He is supported by direct reports (environmental engineers at Facilities responsible of 14001 EMS management, compliance to regulations, CO2 emissions follow-up/calculations/reporting). Climate-related targets are reviewed and approved by SSC. Targets are extended to relevant employee at 3 Facilities through annual personal performance targets. Alternative Fuels & Energy Manager and his team, responsible of sourcing alternative fuels to Facilities, also have annual performance targets on alternative fuel supply rate and cost. CO2 emissions (total of 3 Facilities) are reported to HeidelbergCement annually. CO2 calculations are based on “WBCSD Cement Sustainability Initiative Cement CO2 and Energy Protocol, Version 3.1 CO2 Emissions and Energy Inventory”. Year 2018 scope-1 emissions is 5611429 tCO2e and scope-2 emissions is 248900 tCO2e. Climate-related risks are defined and followed by RMEM and Corporate Risk Manager (CRM). Risks are reported by CRM who is Head of Compliance & Transparency pillar at SWC. Akçansa manages climate-related risks as a part of integrated risk management system through specific procedures issued both from Sabancı Holding and HeidelbergCement. Climate-related risks are regularly reported to both shareholders. Defined risk parameters are checked and evaluated regularly. Akçansa publicly disclosed its 2020 specific CO2 emission target in 2010 sustainability report (first report and first CO2 target in Turkish cement industry) as 830 kg CO2/ton clinker (by end of 2018 we realised 837 kg CO2/ton clinker). The entire organisation from technicians to GM directly contributes to CO2 emission target through annual sustainability KPI targets such as specific heat consumption, rate of alternative fuels, cement/clinker ratio and energy efficiency.

### C0.2

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

| | Start date | End date | Indicate if you are providing emissions data for past reporting years | Select the number of past reporting years you will be providing emissions data for |
|---|---|---|---|---|
| Row 1 | January 1 2018 | December 31 2018 | Yes | 1 year |

### C0.3

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

Turkey

### C0.4

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

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 consolidation approach to your Scope 1 and Scope 2 greenhouse gas 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

# 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 | Akçansa Board of Directors are the highest-level individuals with direct responsibility for all climate-related issues. Chairman is representing Sabancı Holding as President of Cement Business Unit. He is informed regularly by Akçansa GM on behalf of the Sustainability Steering Committee in Akçansa Board Meetings. His responsibility is to approve a sustainability vision and strategy. |
| Other, please specify (Vice Chairman) | Akçansa Board of Directors are the highest-level individuals with direct responsibility for all climate-related issues. Vice President is representing HeidelbergCement as Vorstand Member responsible from CEO Africa & East Mediterranean. He is informed regularly by Akçansa GM on behalf of the Sustainability Steering Committee in Akçansa Board Meetings. His responsibility is to define sustainability vision and strategy. |
| Director on board | Akçansa Board of Directors are the highest-level individuals with direct responsibility for all climate-related issues. Other Board Members have the responsibility to discuss, 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. |

## C1.1b

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

| Frequency with which climate-related issues are a scheduled agenda item | Governance mechanisms into which climate-related issues are integrated | Please explain |
|---|---|---|
| Scheduled – some meetings | Reviewing and guiding strategy<br>Reviewing and guiding risk management policies<br>Reviewing and guiding annual budgets<br>Reviewing and guiding business plans<br>Setting performance objectives<br>Monitoring implementation and performance of objectives<br>Monitoring and overseeing progress against goals and targets for addressing climate-related issues | Cement industry currently represents about 7% 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 and strategy company’s adaptation to low carbon future. For cement business use of any sort of available alternative fuels instead of fossil fuels is the main potential to mitigate the impact on climate change. That’s been clearly defined by the Board in company sustainability strategy. In Board meetings, this topic is followed up and evaluated under operational performance of Plants including substitution rate of alternative fuels in fuel mix and energy efficiency 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 President of Early Risk Identification Committee which handles climate-related risks as well. The Committee review and guide sustainability & risk management policies. |

## 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 | Half-yearly |
| Sustainability committee | Both assessing and managing climate-related risks and opportunities | Quarterly |
| Process operation manager | Assessing climate-related risks and opportunities | Quarterly |
| Facility manager | Both assessing and managing climate-related risks and opportunities | Quarterly |
| Other, please specify (Raw Materials & Environmental Manager) | Both assessing and managing climate-related risks and opportunities | Quarterly |
| Risk manager | Assessing climate-related risks and opportunities | Quarterly |
| Other, please specify (Alternative Fuels and Energy Manager) | Both assessing and managing climate-related risks and opportunities | Quarterly |

## C1.2a

**(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).**

Climate -related issues are one of the top priority tasks in sustainability management at Akçansa.

**Akçansa Board of Directors** is the highest level which is responsible of defining sustainability vision and strategy. Akçansa GM reports on key sustainability KPIs and relevant ongoing projects to Board members twice a year on behalf of Sustainability Steering Committee. Chairman of Board is representing Sabancı Holding as President of Cement 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. Other Board Members have the responsibility to discuss, 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.

**Sustainability Steering Committee (SSC)** which consists of Akçansa Executive Committee Members (GM and Deputy GMs). Its main mission is to approve and follow up sustainability targets & climate change related projects. SSC meets twice a year in which Chairman of SWC shares important issues to SSC members.

**Sustainability Working Committee (SWC)** takes the key position to set corporate targets as well as to develop and implement projects. Being chaired by Deputy GM-Operations Function who directly reports to Akçansa GM, it is composed of 6 pillars namely; Innovation & Industry 4.0, Occupational Health & Safety, Reducing Environmental Footprint, Stakeholder Engagement, Circular economy and Compliance & Transparency. Each pillar is managed by relevant corporate managerial positions. Committee Members build Working Groups (WGs) or Task Forces (TFs) to develop and implement projects which would maintain to reach sustainability targets. The Committee meets every 4 months.

**Deputy GM-Operations** has the responsibility of being President of SWC and member of SSC. 3 plant managers directly report to him. He sets the climate change related targets (such as alternative fuel rate and energy efficiency KPIs) together with Plant Managers and Raw Materials & Environmental Manager (both are direct reports of Deputy GM-Operations).

**Facility 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

**Raw Materials & Environmental Manager** is the Head of “Reducing Environmental Footprint” pillar in SWC. He is supported by his direct reports (Environmental Team: environmental engineers at plants responsible of 14001 EMS management, compliance to regulations, CO2 emissions follow-up/calculations/reporting). He is responsible of setting the climate change related targets (such as alternative fuel rate and energy efficiency KPIs) together with Deputy GM-Operations and Plant Managers. Additionally, he sets the climate related risks together with Corporate Risk Manager.

**Corporate Risk Manager** define and follow climate related risks Raw Materials & Environmental Manager. He is a direct report of Sabancı Holding Risk Management Director. He reports climate related risks to Sabancı Holding regularly.

**Alternative Fuels & Energy 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?**

Yes

## C1.3a

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

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

**Types of incentives**
Monetary reward

**Activity incentivized**
Other, please specify (Continuous Improvement)

**Comment**
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, increasing alternative fuels rate 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.

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**Who is entitled to benefit from these incentives?**
Other, please specify (White collar employee (from General Manager to Engineers))

**Types of incentives**
Monetary reward

**Activity incentivized**
Other, please specify (Annual performance targets)

**Comment**
All Akçansa white collar employee from General Manager 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 energy efficiency, rate of alternative fuels and biomass in fuel mix, clinker/cement ratio. Those who achieves operational performance targets are rewarded with a bonus payment on a yearly basis.

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**Who is entitled to benefit from these incentives?**
Board/Executive board

**Types of incentives**
Monetary reward

**Activity incentivized**
Emissions reduction target

**Comment**
Board Members and Executive Committee Members receive a monetary reward if the overall performance of the Group CO2 related targets is achieved.

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**Who is entitled to benefit from these incentives?**
Corporate executive team

**Types of incentives**
Monetary reward

**Activity incentivized**
Emissions reduction target

**Comment**
Board Members and Executive Committee Members receive a monetary reward if the overall performance of the Group CO2 related targets is achieved.

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## C2. Risks and opportunities

### C2.1

**(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.**

| | From (years) | To (years) | Comment |
|---|---|---|---|
| Short-term | 0 | 3 | - getting prepared for upcoming legislation changes on national regulations that may limit CO2 emissions - increase alternative fuels and decrease fossil fuels in fuel mix - increase energy efficiency -define company's 2030 sustainability goals (including specific CO2 emission target) and get approval of Sustainability Steering Committee |
| Medium-term | 3 | 5 | - getting prepared for a possible ETS or carbon tax - keep following up corporate 2030 CO2 & energy efficiency targets - looking for opportunities in the market to produce more additive cement (i.e. to increase clinker ratio in cement which decreases absolute and specific CO2 emissions) - continue taking improvement actions to increase alternative fuels and improve energy efficiency - follow-up progress on national & international regulations/trends on climate-related issues and take required position/action |
| Long-term | 5 | 20 | - keep following up corporate 2030 CO2 & energy efficiency targets - looking for opportunities to invest in renewable energy - looking for opportunities in the market to produce more additive cement (i.e. to increase clinker ratio in cement which decreases absolute and specific CO2 emissions) - continue taking improvement actions to increase alternative fuels and improve energy efficiency - follow-up progress on national & international regulations/trends on climate-related issues and take required position/action - define company's post-2030 sustainability goals (including specific CO2 emission target, energy efficiency target, and AF and biomass usage target) |

### C2.2

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

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

## C2.2a

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

| | Frequency of monitoring | How far into the future are risks considered? | Comment |
|---|---|---|---|
| Row 1 | Six-monthly or more frequently | >6 years | Akçansa manages climate-related risks as a part of Integrated Management System (IMS) that includes ISO 14001:2015. Climate-related risks that may arise from climate change impacts and from compliance to environmental regulations are reported to Sabancı Holding through “Compliance Risks Report”, a consolidated risk follow-up inventory that’s updated 4 times a year. This procedure directly linked to Sabancı Holding Risk Management Procedure and HeidelbergCement Risk Management System Guidance. The risks from the operation at Facilities are managed through ISO 14001:2015 Environmental Management System standards. Each department (operation, environment, finance, legal, sales, etc.) defines their risks which are checked by Environmental Engineer and Facility Manager. High risks are assessed by Raw Materials & Environmental Manager and Corporate Risk Manager. The action plans are evaluated and approved by Sustainability Steering Committee. |

## C2.2b

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

All climate-related risks are managed through ISO 14001:2015 Environmental Management System as well as Sustainability Targets. 3 Cement Plants have the ISO 14001 Energy Management System and ISO 50001 Energy Management System. During identification and assessment of climate-related risks Akçansa also takes corporate approach of both shareholders (Sabancı Holding & HeidelbergCement).

Climate-related risks are defined and followed together by Raw Materials & Environmental Manager and Corporate Risk Manager. Risks are reported by Corporate Risk Manager, a direct report of Sabancı Holding Risk Management Director, who manages Compliance & Transparency pillar at Sustainability Working Committee. Akçansa manages climate related risks as a part of integrated risk management system through specific procedures issued both from Sabancı Holding and HeidelbergCement sides. Climate-related risks are reported to Sabancı Holding 4 times a year under “Compliance Report”. Defined risks parameters are checked and evaluated regularly. The Compliance Report is reviewed and followed up by Sabancı Holding Risk Committee.

One of the most critical issue is to follow up of upcoming regulations and legal compliance. Ministry of Environment has been conducting a project namely “Partnership for market Readiness (PMR)” aiming to define the best carbon pricing model in Turkey. There is no carbon pricing today in the country, but it is very likely that within 5 years a system will be implemented. The outputs of this project show that it will be either an ETS or a carbon tax. That means there comes a limitation to carbon emissions and a cost of carbon emissions. This topic is the most critical risk for Akçansa in short and medium terms.

Another critical task is the customer needs and expectations. Today market conditions rapidly change due to customer needs and expectations resulting from increasing the environmental awareness, improvement of technology etc. People look more for apartments and houses in green building projects which require more environmentally friendly products, for cement it means a blended cement with less clinker and more additives whose carbon emission is much lower compared to ordinary cement.

Another important issue is the impact of climate change to business operations. Today like everywhere in the world may be more, Turkey suffers from abnormal and unpredictable weather conditions, floods, very high rainfall and draught periods all have increasingly negative effect on daily operations as well as future forecast of business.

## C2.2c

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

| | Relevance & inclusion | Please explain |
|---|---|---|
| Current regulation | Relevant, always included | Turkey has not ratified Paris Agreement yet through approval by the parliament however Ministry of Environment has been working on PMR Project (Partnership for Market Readiness) to define the best system for carbon pricing that fits Turkey. Today only direct regulation related to climate change is "GHG Monitoring Reporting Verification" which has been in force since 2015. Based on this regulation we calculate our CO2 emissions end of each year. Afterwards a certified 3rd party audits and verifies our calculation and issues a final report to Ministry of Environment. This regulation bears no financial sanction; but a very critical issue for upcoming carbon pricing process. |
| Emerging regulation | Relevant, always included | Turkey has not ratified Paris Agreement yet through approval by the parliament however Ministry of Environment has been working on PMR Project (Partnership for Market Readiness), with the funding of World Bank, to define the best system for carbon pricing that fits Turkey. So far outcomes of the project show 2 best alternatives are ETS and carbon tax. It is not defined yet when a carbon pricing system will start; however, it will surely come in short time period. That means carbon limitation, quotation and pricing will come which lead to a burden on companies. -The risk minimization is also supported with policy engagement activities. E.g. actively participates in the PMR Turkey (Partnership for Market Readiness) Project. Specifically, Turkey seeks the PMR's help in realizing its vision for market-based mechanisms to mitigate GHG. -We are in constant communication with our professional associations to manage this risk. We are working on and preparing for these changes by participating in working groups on environment and climate. |
| Technology | Relevant, always included | Since Akçansa is a technology driven company, risks arising from technology is relevant for the company. Technology risks are defined by Digitalisation & Industry 4.0. Manager, a direct report of General 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 or etc.) Our carbon mitigation strategy takes such risk into consideration in a way to maximise alternative fuel rate in fuel mix. On the other hand, technological improvements bring opportunities to cement business to combat climate-change. Machine communication, Internet of Things, various kind of sensor systems are available today to control process systems. We use full automation systems in our plants to provide the best burning conditions so that maximum use of alternative fuels become possible. 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. Carbon capture and storage is underway in the sector we continue to search about this technology. We keep in touch with experts at our shareholder HeidelbergCement for such critical tasks. |
| Legal | Relevant, always included | Exposure to climate-related legal risks is closely monitored and assessed by Raw Materials and Environmental Manager and Legal department. It is regularly evaluated and reported to Sabancı Holding in Compliance Risk Report. Turkey has not ratified Paris Agreement yet through approval by the parliament; however, Ministry of Environment has been working on PMR Project (Partnership for Market Readiness), with the funding of World Bank, to define the best system for carbon pricing that fits Turkey. Raw Materials and Environmental Manager closely monitors the progress of this project and participates to all relevant seminars/meetings organised by Ministry of Environment. |
| Market | Relevant, always included | Market risks are included in our risk assessment process and procedure. Today customer behaviours are changing very rapidly and their awareness to climate-change also increases. That, indeed, brings for us the need to take various measures against that risk. Marketing & Sales department monitors and manages this 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 work on projects for high quality low carbon cement/cementitious products. We perform projects for alternative building materials with very much less carbon emissions with academicians at Sabancı University. |
| Reputation | Relevant, always included | Reputation is a critical risk and needs special management in cement business which is, due to its usage of natural raw materials and carbon emissions, unfortunately has some disadvantages from public perspective. This becomes more critical after Paris Agreement which brought the emissions issue more open insight to public. Akçansa manages this risk in coordination of Plant Managers, Raw Materials & Environmental Manager and Corporate Communications Manager. We use alternative fuels, most are waste needs to be dumped or requires disposal, instead of conventional fossil fuels that have highest impact on CO2 emissions limitations. That means each ton of alternative fuel we use have various positive impacts on environment and country's economy. We burn industrial and municipal wastes, used tyres and control our emissions with the highest technology measurement devices. We have "Neighbour Councils" at each Plant which consists of community, authority representatives. The aim is to build an open and transparent communication with them where we present the plant's status, new projects etc and listens to their voice. 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). |
| Acute physical | Relevant, always included | 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 facilities and result in costs and damages. Turkey, like every single part of the world, faces acute physical risks at country level, such as unpredictable/extreme rainfalls, draughts etc. These risks are evaluated with support of our Corporate Risk Manager 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 2016) which caused production stops and damage to the plant. Additionally, we purchase coal/petcoke from other countries, export cement/clinker to various countries by shipment and in case of a storm the shipments/supplies would disrupted and lead to stoppages of operation. Such conditions also effect local supplies and sells also, for sure. |
| Chronic physical | Relevant, always included | Akçansa takes chronic physical risks very seriously and manages it with support of Corporate Risk Manager and reports to Sabancı Holding and Akçansa Board of Directors. |
| Upstream | Relevant, always included | Akçansa takes upstream climate-related risks seriously in risk evaluations since they would have the potential to bring additional costs, because of production stops due to lack of raw materials, fuels, energy and necessary services. Supply Chain Pillar of Sustainability Working Committee, managed by Purchasing Manager and Alternative Fuels Manager works closely with Plants and Raw Materials & Environmental Manager to evaluate and manage such risks. As a purchasing strategy we diversify supplier portfolio aiming to to keep alternative suppliers on side for each raw materials, fuels and energy suppliers as a measure against upstream risks. |
| Downstream | Relevant, always included | Like others, downstream climate-related risks are also encountered in Akçansa risk assessment process. An example to such risks could be disruptions of product supply due to extreme/ unpredictable weather conditions. Such risks are evaluated by Marketing & Sales and Logistics departments. Alternative supply plans are needed to prevent additional cost burdens that likely to occur in such cases. This may bring loss of customers and decrease in reputation as well. Hence very seriously considered and evaluated. |

## C2.2d

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

Climate-related risks and opportunities are defined and followed together by Raw Materials & Environmental Manager and Corporate Risk Manager. Risks are reported by Corporate Risk Manager who manages Compliance & Transparency pillar at Sustainability Working Committee. Defined climate-related risks and opportunities are discussed in Sustainability Working Committee, at which each pillar is managed by Managers of relevant departments who are very much in coordination with multiple levels from plant Managers to experts/engineers. Since the Committee reports directly to Sustainability Steering Committee all risks & opportunities are well closely monitored by top management of the company.

Akçansa manages climate related risks as a part of integrated risk management system through specific procedures issued both from Sabancı Holding and HeidelbergCement sides. Climate-related risks are reported to Sabancı Holding 4 times a year under "Compliance Report". Defined risks parameters are checked and evaluated regularly. The Compliance Report is reviewed and followed up by Sabancı Holding Risk Committee. Opportunities would be related to sustainable or low CO2 products, usage of alternative fuels etc.

**Example for a risk/opportunity:**

Using alternative fuels and biomass is a real big opportunity for us. As we increase the substitute rate of AF and biomass instead of coal we contribute to mitigate CO2 emissions, to manage waste and turn it into economy.

## C2.3

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

Yes

## C2.3a

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

**Identifier**
Risk 1

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

**Risk type**
Transition risk

**Primary climate-related risk driver**
Policy and legal: Increased pricing of GHG emissions

**Type of financial impact**
Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

**Company- specific description**
Paris Climate Agreement will bring limitations on carbon emissions to cement business based on Turkey's INDCs - Intended Nationally Determined Contributions. Turkish Ministry of Environment has been performing a project namely Partnership for Market Readiness (PMR) to evaluate which market-based carbon pricing system would be the best for Turkey. So far ETS (emission trading scheme) or carbon tax seem to be two alternatives. It is not defined yet if free allowances would be given or what would be the price level for carbon; however, in any case a carbon pricing process will get initiated in the short term which will lead to additional operating cost burden to the company. The magnitude of that risk would mainly depend on the market price for allowances, the volume of free allocation and our cement production volume.

**Time horizon**
Short-term

**Likelihood**
Very likely

**Magnitude of impact**
Medium-low

**Are you able to provide a potential financial impact figure?**
Yes, an estimated range

**Potential financial impact figure (currency)**
<Not Applicable>

**Potential financial impact figure – minimum (currency)**
1308569

**Potential financial impact figure – maximum (currency)**
3925708

**Explanation of financial impact figure**
Since there is no carbon pricing system in place yet in Turkey, only offsetting in Voluntary carbon markets is possible. In calculation of above potential impact figure, we took ETS cap for EU countries 766 kg CO2 ton/clinker as reference value. Year 2018 net specific CO2 emission of our 3 plants is 837 kg CO2 ton/clinker. The difference between our actual emission and cap values is 71 kg CO2/ton clinker. Year 2018 total clinker production at our 3 plants (Büyükçekmece, Çanakkale and Ladik) is 6.512.560 ton. The excess specific CO2 emission is 462.392 ton. This amount will undergo for a carbon cost to Compay. In calculation, unit carbon price we used is from voluntary emission reduction (VER) prices of the projects developed in Turkey which is in the range of 0,5 – 1,5 Euro/ kg CO2 (from www.markit.com). Average Euro/TL for 2018 is 5,66.

**Management method**
Management of these risks is integrated into our corporate risk management. All risks relating to climate change are monitored by Raw Materials and Environmental Manager with support of Plant Managers as well as Corporate Risk Manager. The strategy for Akçansa to combat climate change and to mitigate CO2 emissions is to maximise alternative fuels including biomass, to improve energy efficiency and to decrease clinker rate in cement. The first is under management of Plant Managers and his team, Raw Materials and Environmental Manager and Alternative Fuels Manager. The target is to increase supply of biomass, industrial and municipal waste, used tyres in fuel mix. To decrease rate of conventional fossil fuels in fuel mix. To improve energy efficiency, Plant Managers and Energy Managers at Plants monitor energy KPIs, develop efficiency improvement projects. For the third one, to decrease rate of clinker in cement, Plant production and quality teams work closely with the Marketing and Sales team. All these management issues are directly linked with annual performance KPIs of relevant employees. The performance results are monitored by the General Manager end of year.

**Cost of management**
500000

**Comment**
The cost of management is a very rough estimate depending on Human resource cost, R&D cost and development and implementation cost of Energy efficiency projects.

**Identifier**
Risk 2

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

**Risk type**
Physical risk

**Primary climate-related risk driver**
Chronic: Changes in precipitation patterns and extreme variability in weather patterns

**Type of financial impact**
Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

**Company- specific description**
We extract our major raw materials from company owned quarries, and purchase minor amount of additives as raw material. Büyükçekmece quarries are 20 km to Facility. In this scenario we evaluated interruption of material supply for 2 weeks due to extreme weather conditions which caused collapse of bridge connecting quarry to main transport road. In this case we should purchase required material from 3rd party sources to run the operation and build the bridge again. Financial impact reflects additional cost of material supplied from 3rd party and investment for the new bridge.

**Time horizon**
Medium-term

**Likelihood**
Likely

**Magnitude of impact**
Medium

**Are you able to provide a potential financial impact figure?**
Yes, a single figure estimate

**Potential financial impact figure (currency)**
2900000

**Potential financial impact figure – minimum (currency)**
<Not Applicable>

**Potential financial impact figure – maximum (currency)**
<Not Applicable>

**Explanation of financial impact figure**
In this scenario we evaluated interruption of material supply for 2 weeks due to extreme weather conditions which caused collapse of bridge connecting quarry to main transport road. In this case we should purchase required material from 3rd party sources to run the operation and build the bridge again. Financial impact reflects additional cost of material supplied from 3rd party and investment for the new bridge.

**Management method**
We keep some stock raw materials in facility, and keep good contact with 3rd party suppliers.

**Cost of management**
400000

**Comment**
The cost of management is a very rough estimate of additional raw material stocks in the facility

---

**Identifier**
Risk 3

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

**Risk type**
Physical risk

**Primary climate-related risk driver**
Chronic: Changes in precipitation patterns and extreme variability in weather patterns

**Type of financial impact**

**Company- specific description**
Higher temperatures bring risks for fire, everywhere in the world this risk is becoming more likely to happen. In this scenario a serious fire is considered that bring about damage to assets as well as production stop for 1 month at Çanakkale Plant.

**Time horizon**
Medium-term

**Likelihood**
Likely

**Magnitude of impact**
High

**Are you able to provide a potential financial impact figure?**
Yes, a single figure estimate

**Potential financial impact figure (currency)**
24900000

**Potential financial impact figure – minimum (currency)**
<Not Applicable>

**Potential financial impact figure – maximum (currency)**
<Not Applicable>

**Explanation of financial impact figure**
Fire causes damages to the production line (clinker kiln) and leads to the stop of the kiln for a month. The figure includes the potential cost of damage plus loss of revenue.

**Management method**
The management of these risks is integrated into our corporate risk management processes. To minimize negative financial impacts from damages to assets and interruptions of production we counteract weather-related fluctuations in sales volumes and risks from trends in sales markets with regional diversification. Any time production is disrupted, clinker or cement supply from our Çanakkale Plant is promptly initiated.

**Cost of management**
500000

**Comment**
The cost of management is a very rough estimate depending on Human resource cost.

## C2.4

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

## C2.4a

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

**Identifier**
Opp1

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

**Opportunity type**
Resource efficiency

**Primary climate-related opportunity driver**
Use of recycling

**Type of financial impact**
Other, please specify (Better competitive position to reflect shifting consumer preferences, resulting in increased revenues)

**Company-specific description**
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 mitigate CO2 emissions. Rate of alternative fuel usage rate Turkish cement industry is around 5,0% which needs to be increased. For that purpose, relevant Committee in TCMA (Turkish Cement Manufacturers Association) keeps lobbying for necessary modifications in current regulation at Ministry of Environment. Akçansa continuously makes market research to access more alternative fuel possibilities knowing the fact that there is a very high potential. The collection, handling and preparation activities are very poor and needs too much efforts for improvement. The metropolitan municipalities are required to establish the mechanical and biological treatment plants (MBT) to prepare SRF (Solid recovery Fuel) from municipal wastes and stop landfilling of these wastes.

**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)**
5000000

**Potential financial impact figure – minimum (currency)**
<Not Applicable>

**Potential financial impact figure – maximum (currency)**
<Not Applicable>

**Explanation of financial impact figure**
Using more alternative fuels and biomass will result in a positive potential impact to the company. The estimated figure represents the potential saving via switch from coal/petcoke to local AF and biomass.

**Strategy to realize opportunity**
To research in the market, to encourage potential AF and biomass producers for more to produce. Besides, continuous R&D initiatives are needed with institutions and producers. And finally, more communication is required in the market with various parts.

**Cost to realize opportunity**
1000000

**Comment**
The cost is for additional human resource, work force, communication and R&D projects.

**Identifier**
Opp2

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

**Opportunity type**
Resource efficiency

**Primary climate-related opportunity driver**
Use of more efficient modes of transport

**Type of financial impact**

Reduced operating costs (e.g., through efficiency gains and cost reductions)

**Company-specific description**
Facilitate access to raw material resources (Drying of very wet areas facilitates transport of raw materials)

**Time horizon**
Short-term

**Likelihood**
Likely

**Magnitude of impact**
Medium

**Are you able to provide a potential financial impact figure?**
Yes, a single figure estimate

**Potential financial impact figure (currency)**
1200000

**Potential financial impact figure – minimum (currency)**
<Not Applicable>

**Potential financial impact figure – maximum (currency)**
<Not Applicable>

**Explanation of financial impact figure**
Diesel consumption of vehicles can be reduced through route optimization of vehicles which in turn decrease diesel cost and mitigate CO2 emissions.

**Strategy to realize opportunity**
Routes of transport should be studied and drivers are required to be trained for increasing awareness.

**Cost to realize opportunity**
200000

**Comment**
Human resources, additional work force and training budget needed.

## C2.5

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

| | Impact | Description |
|---|---|---|
| Products and services | Impacted | Due to unpredicted/extreme weather conditions, higher rainfall periods cause increase the humidity of raw materials and fuels which increase operational cost, lead to clogging at crushers, decrease efficiency at mills, increase calorific consumption and energy consumption, decrease quality of cement. |
| Supply chain and/or value chain | Impacted | Weather conditions may have an adverse impact on marine shipment, hence, loading periods of ships are delayed for export sales that may bring market loss, reputation at customers. |
| Adaptation and mitigation activities | Not impacted | Mitigation activities brought an opportunity since increase in usage of alternative fuels including biomass in fuel mix lead to new business opportunities, increase of experience in company. In 2018 heavy rainfall led to disruption in raw material supply from quarry at Çanakkale Plant for 1 day. Due to adequate material stock, this extra condition did not lead to any stop at operation. |
| Investment in R&D | Impacted | - Since customer behaviour and expectations are changing through low carbon products, the number of green projects has been increasing that require new products. Akçansa continuously work on R&D projects for low carbon cement and for alternative cementitious material. One project started in 2018 is calcined clay. |
| Operations | Impacted | - Operations are impacted for the need of transition to low carbon path. We need to mitigate our CO2 emissions through increasing alternative fuels and biomass in fuel mix, increasing low carbon products in sales portfolio and energy efficiency. Plant modernizations such as investments into best available technology (BAT) are also driven by the climate-related risks identified specially to increase energy efficiency in operations. |
| Other, please specify | Not evaluated | |

## C2.6

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

| | Relevance | Description |
|---|---|---|
| Revenues | Impacted | The transition to a low carbon operation results in positive impact to our revenues, so considered to be an opportunity for us. Since alternative fuels and biomass is supplied from local markets in comparison to conventional fuels like coal that is imported. However, as a carbon pricing system (ETS or tax) is enacted that will bring additional cost burden and will have a negative impact on revenues. And efforts to increase energy efficiency brings positive impact on revenues as well. |
| Operating costs | Impacted | Like revenues, operating costs are positively influenced as we increase the usage of alternative fuels and biomass and improve energy efficiency. However, as a carbon pricing system (ETS or tax) is enacted that will bring additional cost burden and will have a negative impact on revenues. |
| Capital expenditures / capital allocation | Impacted | The transition to a low carbon operation has impacts on capital expenditures. To increase usage of alternative fuels and biomass we do invest for automatic feeding systems. And for energy efficiency we also do invest to change big fans, motors. We may need to invest for tire/plastic shredding systems in short-medium terms. |
| Acquisitions and divestments | Not yet impacted | So far climate-related risks and opportunities have not yet impacted any acquisition process. However, for an acquisition abroad the CO2 emissions of the plant and relevant regulations in that country will surely affect the decision. |
| Access to capital | Not yet impacted | So far, climate related risks and opportunities have not yet impacted our access to capital. |
| Assets | Impacted | Climate-related risks and opportunities have played a role concerning investment in our assets. In that respect, climate-related transition risks have impacted our assets already. We invested for waste heat recovery system (24 million USD) and for a wind turbine (2,6 million USD) in Çanakkale Plant. Our CO2 strategic plan, or low carbon transition plan, plays a crucial role here as it sets out asset-by-asset emission reduction targets. |
| Liabilities | Not yet impacted | So far, climate-related risks and opportunities have not really impacted our liabilities very much. However, we are surely aware of the risk as carbon pricing (Tax or ETS) is enacted in short-medium term liability of company will increase to comply with regulation. |
| Other | Not evaluated | |

## C3. Business Strategy

### C3.1

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

Yes

### C3.1a

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

Yes, qualitative and quantitative

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

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

Yes

### C3.1c

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

Akçansa considers climate-related issues to have a potential impact to company business objectives in the next years. To manage this properly a low carbon transition plan is surely needed. The most critical issue is CO2 management. CO2 emission is unavoidable consequence of decarbonization of limestone (responsible of 60% of total CO2 emissions) and combustion of fuels in the kiln (responsible of 40% of total CO2 emissions).

Akçansa has an open and transparent business strategy regarding climate-related issues and bears a leadership and pioneering role to create awareness among the construction materials and cement sector in Turkey.

Our business strategy management to mitigate that risk includes 3 main pillars:

**Using alternative fuels and biomass:**

Using alternative fuels and biomass (industrial & municipal waste, RDF, SRF, used tyres, sewage sludge, waste oil) in fuel mix instead of fossil fuels such as coal is a potential way to mitigate CO2 emissions. We have publicly announced alternative fuel rate and reduction of specific CO2 emission ambitions for year 2020. Used tyres, industrial & municipal waste, sewage sludge and waste oil are the main alternative fuel sources available in the market. The access to these sources mostly depend on the market conditions and availability changes from time to time, but market has a big potential and we push and encourage trustable suppliers to take more action and investment for more supply. Our 3 plants have shifted to use more alternative fuels to substitute fossil fuels. We intend to increase the rate of alternative fuels and biomass year by year. New sources are under research.

**Innovation and R&D:**

Since customer behaviour and expectations are changing through low carbon products, the number of green projects has been increasing that require sustainable products. Akçansa continuously works on R&D projects developing low carbon solutions, reducing the clinker content in cement and for alternative cementitious material. One project started in 2018 is calcined clay. Increasing the clinker rate in cement becomes a part of business strategy despite it is largely influenced and shaped by the market demand. Using CEM-II type blended cement rather than CEM-I in ready mixed concrete products benefits very much in diminishing CO2 emissions.

**Energy efficiency and Renewables:**

Production of electricity accounts for one of the major CO2 emissions. Using alternative energy sources and renewable energy is the way to decrease emissions in this area. Waste hot kiln gas is used in Çanakkale Plant to produce energy via waste heat recovery (WHR) plant which is 15 MW capacity and produces 30% of plant's annual energy need. In that way CO2 emission has been seriously diminished. In addition, a 2,35 MW wind turbine investment which is the first in Turkish cement industry (2,6 million USD investment) produces 1,8% energy need of the plant. Such investments will be continuously done in coming years.
**Land degradation:**

Land degradation is another issue that is included in Akçansa business strategy. We have a clear strategy and 2020 ambitions to rehabilitate the mining sites that serve natural resources for raw material. This enables the extraction sites to return into a new ecosystem where fauna and flora diversity are recreated which have a positive impact on climate change.
This comprehensive plan is in line for us to reach our climate-related targets in 2020 Sustainability Commitments (and will be in line with climate-related targets to take part in our 2030 Sustainability Commitments which will be announced latest in first half of year 2020).

## C3.1d

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

| Climate-related scenarios | Details |
|---|---|
| Nationally determined contributions (NDCs) | As a Company whose one of the main shareholders is HeidelbergCement, a global player in cement business and is member of WBCSD-Cement Sustainability Initiative, Akçansa is a part of HeidelbergCement's recently updated Cement Low-carbon Technology Roadmap. Today there is no carbon pricing system enacted in Turkey. But it will come in short-medium term either ETS or tax. Turkey has not ratified Paris Agreement yet; however, has issued INDC which gives 21% decrease from business as usual scenario. We have a scenario analysis as part of our low carbon transition plan. The analysis identifies on a plant-by-plant level, which emission reduction levers such as alternative fuels/fuel switch, energy efficiency and reduction of clinker factor. We considered all plants of and the data used to calculate potential impact for a year. The price of the carbon was taken from voluntary emission reduction (VER) prices of the projects developed in Turkey available at www.markit.com. |

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

**(C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e) Disclose details of your organization's low-carbon transition plan.**

Cement business is an energy intensive industry. Use of fossil fuels and electricity lead to the business being one of the top carbon emitters.

In our low-carbon transition plan mainly 3 issues are in the agenda:

**Using alternative fuels and biomass:**

Using alternative fuels and biomass (industrial & municipal waste, RDF, SRF, used tyres, sewage sludge, waste oil) in fuel mix instead of fossil fuels such as coal is a potential way to mitigate CO2 emissions. We have publicly announced alternative fuel rate and reduction of specific CO2 emission ambitions for year 2020. Used tyres, industrial & municipal waste, sewage sludge and waste oil are the main alternative fuel sources available in the market. The access to these sources mostly depend on the market conditions and availability changes from time to time, but market has a big potential and we push and encourage trustable suppliers to take more action and investment for more supply. Our 3 plants have shifted to use more alternative fuels to substitute fossil fuels. We intend to increase the rate of alternative fuels and biomass year by year. New sources are under research.

**Innovation and R&D:**

Since customer behaviour and expectations are changing through low carbon products, the number of green projects has been increasing that require sustainable products. Akçansa continuously works on R&D projects developing low carbon solutions, reducing the clinker content in cement and for alternative cementitious material. One project started in 2018 is calcined clay. Increasing the clinker rate in cement becomes a part of business strategy despite it is largely influenced and shaped by the market demand. Using CEM-II type blended cement rather than CEM-I in ready mixed concrete products benefits very much in diminishing CO2 emissions.

**Energy efficiency and Renewables:**

Production of electricity accounts for one of the major CO2 emissions. Using alternative energy sources and renewable energy is the way to decrease emissions in this area. Waste hot kiln gas is used in Çanakkale Plant to produce energy via waste heat recovery (WHR) plant which is 15 MW capacity and produces 30% of plant's annual energy need. In that way CO2 emission has been seriously diminished. In addition, a 2,35 MW wind turbine investment which is the first in Turkish cement industry (2,6 million USD investment) produces 1,8% energy need of the plant. Such investments will be continuously done in coming years.
This comprehensive plan is in line for us to reach our climate-related targets in 2020 Sustainability Commitments (and will be in line with climate-related targets to take part in our 2030 Sustainability Commitments which will be announced latest in first half of year 2020).

## C4. Targets and performance

### C4.1

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

### C4.1b

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

**Target reference number**
Int 1

**Scope**
Scope 1

**% emissions in Scope**
100

**Targeted % reduction from base year**
5.25

**Metric**
Other, please specify (kg CO2/ton of clinker)

**Base year**
2010

**Start year**
2010

**Normalized base year emissions covered by target (metric tons CO2e)**
830

**Target year**
2020

**Is this a science-based target?**
No, and we do not anticipate setting one in the next 2 years

**% of target achieved**
4.45

**Target status**
Underway

**Please explain**
One of our 2020 Sustainability Commitments is the Specific CO2 emissions (830 kg CO2/ton clinker). On the way through a low carbon future we continuously work to increase our performance on increasing the alternative fuels and biomass rate in fuel mix (instead of using fossil fuels) to mitigate our CO2 emissions. By doing so we will be able to reach our 2020 target. Latest by first half of 2020 we will publish our 2030 Sustainability Commitments where Specific CO2 emissions target will be in place as well.

**% change anticipated in absolute Scope 1+2 emissions**
2.5

**% change anticipated in absolute Scope 3 emissions**
0

## C4.2

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

## C4.3

**(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.**
Yes

## C4.3a

**(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.**

| | Number of initiatives | Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *) |
|---|---|---|
| Under investigation | 3 | |
| To be implemented* | | |
| Implementation commenced* | | |
| Implemented* | 10 | 102813 |
| Not to be implemented | | |

## C4.3b

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

**Initiative type**
Energy efficiency: Processes

**Description of initiative**
Other, please specify (Change of raw mill fan)

**Estimated annual CO2e savings (metric tonnes CO2e)**
706.93

**Scope**
Scope 2 (location-based)

**Voluntary/Mandatory**
Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**
620000

**Investment required (unit currency – as specified in C0.4)**
1750000

**Payback period**
4 - 10 years

**Estimated lifetime of the initiative**
16-20 years

**Comment**
Increasing efficiency of fan. This will stop vibration problems, decrease temperature on the bearings and save energy. The investment will lead to 1572000 kwh/year energy save.

## 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. |
| 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 letter, 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. |

## C4.5

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

## C4.5a

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

**Level of aggregation**
Product

**Description of product/Group of products**
We consider R&D works is one of the key issues to mitigate CO2 emissions through low carbon products and alternative sustainable cementitious products. Akçansa R&D works developed two low carbon products namely, A+Beton and Yeşilşap both are used in green building projects as Green Concrete. Both products are composed of low rate of clinker in cement compared to conventional CEM-1 type high clinker cement.

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

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

**% revenue from low carbon product(s) in the reporting year**
1

**Comment**
Due to decrease in green building projects the demand for both products was poor in 2018 so they did not lead to a considerable revenue to company. A+Beton is a durable and high performing concrete product with a significantly reduced CO2 emission value due to 70% of blast furnace slag in its composition. It is developed for environmentally friendly green buildings. Yeşilşap, an environmentally friendly and light ready screed product, reduces CO2 emission up to 35% through special additive blend cements used in its production process. Due to special chemical additives used in its composition, Yeşilşap weighs 25% less when compared with conventional screed products and also contributes to thermal insulation on buildings.

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

**Scope 1**

**Base year start**
January 1 2010

**Base year end**
December 31 2010

**Base year emissions (metric tons CO2e)**
5872720

**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)**
338163

**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.

## C5.2

**(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.**
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)**
5611429

**Start date**
January 1 2018

**End date**
December 31 2018

**Comment**
Scope 1 emissions from cement production at 3 plants. We achieved 7,28% of decrease compared to 2017 scope-1 emissions due to successful performance on increasing the substitution rate of coal with RDF, used tyres and sewage sludge (biomass).

**Past year 1**

**Gross global Scope 1 emissions (metric tons CO2e)**
6052352

**Start date**
January 1 2017

**End date**
December 31 2017

**Comment**
Scope 1 emissions from cement production at 3 plants.

## 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**
248900

**Scope 2, market-based (if applicable)**
<Not Applicable>

**Start date**
January 1 2018

**End date**
December 31 2018

**Comment**
Scope-2 emissions for 2018 includes clinker, cement, ready-mixed concrete, aggregate, and terminal/port operations and head-office. So far, we were disclosing scope-2 emissions only from clinker and cement production. But in 2018 we have added scope-2 emissions from ready-mixed concrete, aggregate and terminal/port operations and head-office so that we have increased our scope-2 disclosing boundaries. For 2018; scope-2 emissions from clinker and cement production is 246137 tCO2e, from ready-mixed concrete and aggregates production is 2432 tCO2e, from terminal/port operations 314,02 tCO2e and from head-office 16,95 tCO2e. If we make a comparison with last year we have achieved 9,60% decrease compared to 2017 scope-2 emissions in clinker and cement production due to continuous improvements in energy efficiency. Reference factor is from IEA.

**Past year 1**

**Scope 2, location-based**
272269

**Scope 2, market-based (if applicable)**
<Not Applicable>

**Start date**
January 1 2017

**End date**
December 31 2017

**Comment**
Scope-2 emissions for 2017 included only clinker and cement production operations. Reference factor is from IEA.

## C6.4

**(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?**
No

## C6.5

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

**Purchased goods and services**

**Evaluation status**
Relevant, not yet calculated

**Metric tonnes CO2e**
<Not Applicable>

**Emissions calculation methodology**
<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
<Not Applicable>

**Explanation**
No emissions from purchased goods and services

**Capital goods**

**Evaluation status**
Relevant, not yet calculated

**Metric tonnes CO2e**
<Not Applicable>

**Emissions calculation methodology**
<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
<Not Applicable>

**Explanation**
No emissions from capital goods

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

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
0.15

**Emissions calculation methodology**
The factors were taken from DEFRA Greenhouse Gas Reporting: Conversion Factors 2019

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
100

**Explanation**
Includes emissions resulting from natural gas and diesel oil used.

### Upstream transportation and distribution

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
3039

**Emissions calculation methodology**
The factors were taken from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories

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

**Explanation**
This data includes raw materials extraction and transportation from own quarries, transportation of purchased coal, alternative fuels all for our 3 cement plants. In addition, raw materials purchase for all ready mixed concrete plants.

### Waste generated in operations

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
55.27

**Emissions calculation methodology**
The factors were taken from DEFRA Greenhouse Gas Reporting: Conversion Factors 2019

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
0

**Explanation**
Waste generated at our 3 cement plants.

### Business travel

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
11757

**Emissions calculation methodology**
The factors were taken from the Greenhouse Gas Protocol -Corporate Value Chain (Scope 3) Accounting and Reporting Standard

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

**Explanation**
Includes emissions from flights (517 tCO2e) and use of company cars (11240 tCO2e).

### Employee commuting

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
65

**Emissions calculation methodology**
The factors were taken from the Greenhouse Gas Protocol -Corporate Value Chain (Scope 3) Accounting and Reporting Standard

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
100

**Explanation**
Employee transportation by shuttle buses at all 3 plants.

### Upstream leased assets

**Evaluation status**
Not relevant, explanation provided

**Metric tonnes CO2e**
<Not Applicable>

**Emissions calculation methodology**
<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
<Not Applicable>

**Explanation**
No upstream leased assets.

### Downstream transportation and distribution

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
2668

**Emissions calculation methodology**
The factors were taken from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories

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

**Explanation**
Data includes sales of clinker, cement, ready-mixed concrete and aggregate products.

### Processing of sold products

**Evaluation status**
Not relevant, explanation provided

**Metric tonnes CO2e**
<Not Applicable>

**Emissions calculation methodology**
<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
<Not Applicable>

**Explanation**
No processing of sold products

### Use of sold products

**Evaluation status**
Relevant, not yet calculated

**Metric tonnes CO2e**
<Not Applicable>

**Emissions calculation methodology**
<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
<Not Applicable>

**Explanation**
We do not calculate yet emissions for use of sold products

### End of life treatment of sold products

**Evaluation status**
Relevant, not yet calculated

**Metric tonnes CO2e**
<Not Applicable>

**Emissions calculation methodology**
<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
<Not Applicable>

**Explanation**
We do not calculate emissions for end of life treatment of sold products

**Downstream leased assets**

**Evaluation status**
Relevant, not yet calculated

**Metric tonnes CO2e**
<Not Applicable>

**Emissions calculation methodology**
<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
<Not Applicable>

**Explanation**
We do not calculate emissions for downstream leased assets

**Franchises**

**Evaluation status**
Not relevant, explanation provided

**Metric tonnes CO2e**
<Not Applicable>

**Emissions calculation methodology**
<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
<Not Applicable>

**Explanation**
We do not have franchises.

**Investments**

**Evaluation status**
Relevant, not yet calculated

**Metric tonnes CO2e**
<Not Applicable>

**Emissions calculation methodology**
<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
<Not Applicable>

**Explanation**
We do not calculate emissions for investments.

**Other (upstream)**

**Evaluation status**
Not relevant, explanation provided

**Metric tonnes CO2e**
<Not Applicable>

**Emissions calculation methodology**
<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
<Not Applicable>

**Explanation**
No calculations for other-upstream

**Other (downstream)**

**Evaluation status**
Not relevant, explanation provided

**Metric tonnes CO2e**
<Not Applicable>

**Emissions calculation methodology**
<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
<Not Applicable>

**Explanation**
No calculations for other-downstream

## C6.7

**(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?**
No

## C6.10

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

**Intensity figure**
0.003416

**Metric numerator (Gross global combined Scope 1 and 2 emissions)**
5860329

**Metric denominator**
unit total revenue

**Metric denominator: Unit total**
1715570101

**Scope 2 figure used**
Location-based

**% change from previous year**
17.96

**Direction of change**
Increased

**Reason for change**
In year 2017 total scope 1+2 emissions were 6324622 t (scope-2 emissions included only clinker and cement production) and revenues were 1519000715 TRY (so intensity figure was 0,004164). In 2018 scope 1+2 emissions are 5860329 t (scope-2 emissions included clinker, cement, ready-mixed concrete, aggregate and terminal/port operations and head-office) and revenue is 1715570101 TRY. There is 17,96% decrease in unit emissions by revenue. The decrease in emissions is due to a decrease in clinker production (by 6,74% or 439000 tons), increase in usage of alternative fuels and biomass instead of coal in production and increase in energy efficiency. In 2018 calculations scope-2 emissions include clinker, cement, ready-mixed concrete, aggregate and terminal/port operations and head-office (boundary increased).

**Intensity figure**
554955

**Metric numerator (Gross global combined Scope 1 and 2 emissions)**
5860329

**Metric denominator**
full time equivalent (FTE) employee

**Metric denominator: Unit total**
1056

**Scope 2 figure used**
Location-based

**% change from previous year**
6.81

**Direction of change**
Decreased

**Reason for change**
In 2017 total emissions and FTE were 6324622 t and 1062 respectively (so intensity figure was 5955,38) There is 6,81% decrease in unit emissions per employee. This is due to decrease in clinker production (by 6,74% or 439000 tons), increase in usage of alternative fuels and biomass instead of coal in production and increase in energy efficiency. In 2018 calculations scope-2 emissions include clinker, cement, ready-mixed concrete, aggregate and terminal/port operations and head-office (boundary increased).

## 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 CO2e per metric ton | Net Scope 1 emissions intensity, metric tons CO2e per metric ton | Scope 2, location-based emissions intensity, metric tons CO2e per metric ton |
|---|---|---|---|
| Clinker | 0.862 | 0.837 | 0.0382 |
| Cement equivalent | 0.768 | 0.746 | 0.034 |
| Cementitious products | 0.777 | 0.755 | 0.0344 |
| Low-CO2 materials | 4.037 | 3.923 | 0.179 |

## C7. Emissions breakdowns

## C7.1

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

Yes

## C7.1a

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

| Greenhouse gas | Scope 1 emissions (metric tons of CO2e) | GWP Reference |
|---|---|---|
| CO2 | 5602147 | IPCC Fifth Assessment Report (AR5 – 100 year) |
| CH4 | 3047 | IPCC Fifth Assessment Report (AR5 – 100 year) |
| N2O | 6235 | IPCC Fifth Assessment Report (AR5 – 100 year) |

## C7.2

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

| Country/Region | Scope 1 emissions (metric tons CO2e) |
|---|---|
| Turkey | 5611429 |

## C7.3

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

By facility

## 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 | 1579965 | 41.0118 | 28.3327 |
| Çanakkale Plant | 3449822 | 39.5156 | 26.1439 |
| Ladik Plant | 581642 | 40.5607 | 35.5306 |

## 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 | 5611429 | 5447991 | The emissions occurred from cement production activities is calculated through We calculate our all emissions through the CSI toll (WBCSD Cement Sustainability Initiative (CSI) Cement CO2 and Energy Protocol. |
| Chemicals production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Coal production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Electric utility generation activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Metals and mining production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (upstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (downstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Steel production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Transport OEM activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Transport services activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |

## C7.5

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

| Country/Region | Scope 2, location-based (metric tons CO2e) | Scope 2, market-based (metric tons CO2e) | Purchased and consumed electricity, heat, steam or cooling (MWh) | Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh) |
|---|---|---|---|---|
| Turkey | 248900 | 0 | 716287.6 | 0 |

## 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 emissions (metric tons CO2e) | Scope 2, market-based emissions (metric tons CO2e) |
|---|---|---|
| Büyükçekmece Plant | 88865 | 0 |
| Çanakkale Plant | 121499 | 0 |
| Ladik Plant | 35773 | 0 |
| Ready-mixed concrete and Aggregates | 2432 | 0 |
| Terminals/Ports | 314.02 | 0 |
| Head-office | 16.95 | 0 |

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

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

| | Scope 2, location-based, metric tons CO2e | Scope 2, market-based (if applicable), metric tons CO2e | Comment |
|---|---|---|---|
| Cement production activities | 246137 | 0 | The emissions occurred from cement production activities is calculated through We calculate our all emissions through the CSI toll (WBCSD Cement Sustainability Initiative (CSI) Cement CO2 and Energy Protocol. |
| Chemicals production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Coal production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Metals and mining production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (upstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (downstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Steel production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Transport OEM activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Transport services activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |

## 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?**

Decreased

## 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 | | <Not Applicable> | | |
| Other emissions reduction activities | 99613 | Decreased | 1.6 | Increasing use of alternative fuels and biomass and increasing energy efficiency |
| Divestment | | <Not Applicable> | | |
| Acquisitions | | <Not Applicable> | | |
| Mergers | | <Not Applicable> | | |
| Change in output | 343742 | Please select | 5.7 | 439000 tons less clinker production compared to last year |
| Change in methodology | | <Not Applicable> | | |
| Change in boundary | 2432 | Increased | 0.04 | Ready-mixed and aggregate production-based scope-2 emissions included |
| Change in physical operating conditions | | <Not Applicable> | | |
| Unidentified | | <Not Applicable> | | |
| Other | | <Not Applicable> | | |

## 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 undertakes this energy-related activity |
|---|---|
| Consumption of fuel (excluding feedstocks) | Yes |
| Consumption of purchased or acquired electricity | Yes |
| Consumption of purchased or acquired heat | Yes |
| Consumption of purchased or acquired steam | No |
| Consumption of purchased or acquired cooling | No |
| Generation of electricity, heat, steam, or cooling | Yes |

## C8.2a

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

| | Heating value | MWh from renewable sources | MWh from non-renewable sources | Total MWh |
|---|---|---|---|---|
| Consumption of fuel (excluding feedstock) | LHV (lower heating value) | | 6430051.4 | 6430051.4 |
| Consumption of purchased or acquired electricity | <Not Applicable> | | 716287.6 | 716287.6 |
| Consumption of purchased or acquired heat | <Not Applicable> | | | |
| Consumption of purchased or acquired steam | <Not Applicable> | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Consumption of purchased or acquired cooling | <Not Applicable> | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Consumption of self-generated non-fuel renewable energy | <Not Applicable> | 6607 | <Not Applicable> | 6607 |
| Total energy consumption | <Not Applicable> | 6607 | 7146339 | 7152946 |

## 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) | 6430051.4 |
| Consumption of purchased or acquired electricity | <Not Applicable> | 716287.6 |
| Consumption of other purchased or acquired energy (heat, steam and/or cooling) | <Not Applicable> | 6607 |
| Total energy consumption | <Not Applicable> | 7152946 |

## 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.**

**Fuels (excluding feedstocks)**
Petroleum Coke

**Heating value**
LHV (lower heating value)

**Total fuel MWh consumed by the organization**
4373923.8

**MWh fuel consumed for self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-generation of heat**
<Not Applicable>

**MWh fuel consumed for self-generation of steam**
<Not Applicable>

**MWh fuel consumed for self-generation of cooling**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

**Comment**

**Fuels (excluding feedstocks)**
Coal

**Heating value**
LHV (lower heating value)

**Total fuel MWh consumed by the organization**
323891.5

**MWh fuel consumed for self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-generation of heat**
<Not Applicable>

**MWh fuel consumed for self-generation of steam**
<Not Applicable>

**MWh fuel consumed for self-generation of cooling**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

**Comment**

**Fuels (excluding feedstocks)**
Heavy Gas Oil

**Heating value**
LHV (lower heating value)

**Total fuel MWh consumed by the organization**
15555.7

**MWh fuel consumed for self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-generation of heat**
<Not Applicable>

**MWh fuel consumed for self-generation of steam**
<Not Applicable>

**MWh fuel consumed for self-generation of cooling**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

**Comment**

---

**Fuels (excluding feedstocks)**
Natural Gas

**Heating value**
LHV (lower heating value)

**Total fuel MWh consumed by the organization**
5277.8

**MWh fuel consumed for self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-generation of heat**
<Not Applicable>

**MWh fuel consumed for self-generation of steam**
<Not Applicable>

**MWh fuel consumed for self-generation of cooling**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

**Comment**

---

**Fuels (excluding feedstocks)**
Lignite Coal

**Heating value**
LHV (lower heating value)

**Total fuel MWh consumed by the organization**
870840.3

**MWh fuel consumed for self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-generation of heat**
<Not Applicable>

**MWh fuel consumed for self-generation of steam**
<Not Applicable>

**MWh fuel consumed for self-generation of cooling**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

**Comment**

---

**Fuels (excluding feedstocks)**
Waste Oils

**Heating value**
LHV (lower heating value)

**Total fuel MWh consumed by the organization**
3055.6

**MWh fuel consumed for self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-generation of heat**
<Not Applicable>

**MWh fuel consumed for self-generation of steam**
<Not Applicable>

**MWh fuel consumed for self-generation of cooling**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

**Comment**

---

**Fuels (excluding feedstocks)**
Tires

**Heating value**
LHV (lower heating value)

**Total fuel MWh consumed by the organization**
448336.9

**MWh fuel consumed for self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-generation of heat**
<Not Applicable>

**MWh fuel consumed for self-generation of steam**
<Not Applicable>

**MWh fuel consumed for self-generation of cooling**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

**Comment**

---

**Fuels (excluding feedstocks)**
Other, please specify (Waste derived fuel)

**Heating value**
LHV (lower heating value)

**Total fuel MWh consumed by the organization**
71667.2

**MWh fuel consumed for self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-generation of heat**
<Not Applicable>

**MWh fuel consumed for self-generation of steam**
<Not Applicable>

**MWh fuel consumed for self-generation of cooling**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

**Comment**

---

**Fuels (excluding feedstocks)**
Industrial Wastes

**Heating value**
LHV (lower heating value)

**Total fuel MWh consumed by the organization**
555.6

**MWh fuel consumed for self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-generation of heat**
<Not Applicable>

**MWh fuel consumed for self-generation of steam**
<Not Applicable>

**MWh fuel consumed for self-generation of cooling**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

**Comment**

---

**Fuels (excluding feedstocks)**

Other, please specify (Sewage sludge)

**Heating value**
LHV (lower heating value)

**Total fuel MWh consumed by the organization**
148056.7

**MWh fuel consumed for self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-generation of heat**
<Not Applicable>

**MWh fuel consumed for self-generation of steam**
<Not Applicable>

**MWh fuel consumed for self-generation of cooling**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

**Comment**

---

**Fuels (excluding feedstocks)**
Biomass Municipal Waste

**Heating value**
LHV (lower heating value)

**Total fuel MWh consumed by the organization**
165556.9

**MWh fuel consumed for self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-generation of heat**
<Not Applicable>

**MWh fuel consumed for self-generation of steam**
<Not Applicable>

**MWh fuel consumed for self-generation of cooling**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

**Comment**

---

## C-CE8.2c

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

**Fuels (excluding feedstocks)**
Petroleum Coke

**Heating value**
LHV

**Total MWh fuel consumed for cement production activities**
4373923.8

**MWh fuel consumed at the kiln**
4373923.8

**MWh fuel consumed for the generation of heat that is not used in the kiln**
0

**MWh fuel consumed for the self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

---

**Fuels (excluding feedstocks)**
Coal

**Heating value**
LHV

**Total MWh fuel consumed for cement production activities**
323891.5

**MWh fuel consumed at the kiln**
323891.5

**MWh fuel consumed for the generation of heat that is not used in the kiln**
0

**MWh fuel consumed for the self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

---

**Fuels (excluding feedstocks)**
Heavy Gas Oil

**Heating value**
LHV

**Total MWh fuel consumed for cement production activities**
15555.7

**MWh fuel consumed at the kiln**
15555.7

**MWh fuel consumed for the generation of heat that is not used in the kiln**
0

**MWh fuel consumed for the self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

---

**Fuels (excluding feedstocks)**
Natural Gas

**Heating value**
LHV

**Total MWh fuel consumed for cement production activities**
5277.8

**MWh fuel consumed at the kiln**
0

**MWh fuel consumed for the generation of heat that is not used in the kiln**
5277.8

**MWh fuel consumed for the self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

---

**Fuels (excluding feedstocks)**
Lignite Coal

**Heating value**
LHV

**Total MWh fuel consumed for cement production activities**
870840.3

**MWh fuel consumed at the kiln**
870840.3

**MWh fuel consumed for the generation of heat that is not used in the kiln**
0

**MWh fuel consumed for the self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

---

**Fuels (excluding feedstocks)**
Waste Oils

**Heating value**
LHV

**Total MWh fuel consumed for cement production activities**
3055.6

**MWh fuel consumed at the kiln**
3055.6

**MWh fuel consumed for the generation of heat that is not used in the kiln**
0

**MWh fuel consumed for the self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

---

**Fuels (excluding feedstocks)**
Tires

**Heating value**
LHV

**Total MWh fuel consumed for cement production activities**
448336.9

**MWh fuel consumed at the kiln**
448336.9

**MWh fuel consumed for the generation of heat that is not used in the kiln**
0

**MWh fuel consumed for the self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

---

**Fuels (excluding feedstocks)**
Other, please specify (Waste derived fuel)

**Heating value**
LHV

**Total MWh fuel consumed for cement production activities**
71667.2

**MWh fuel consumed at the kiln**
71667.2

**MWh fuel consumed for the generation of heat that is not used in the kiln**
0

**MWh fuel consumed for the self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

---

**Fuels (excluding feedstocks)**
Industrial Wastes

**Heating value**
LHV

**Total MWh fuel consumed for cement production activities**
555.6

**MWh fuel consumed at the kiln**
555.6

**MWh fuel consumed for the generation of heat that is not used in the kiln**
0

**MWh fuel consumed for the self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

---

**Fuels (excluding feedstocks)**
Other, please specify (Sewage sludge)

**Heating value**
LHV

**Total MWh fuel consumed for cement production activities**
148056.7

**MWh fuel consumed at the kiln**
148056.7

**MWh fuel consumed for the generation of heat that is not used in the kiln**
0

**MWh fuel consumed for the self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

---

**Fuels (excluding feedstocks)**

Biomass Municipal Waste

**Heating value**
LHV

**Total MWh fuel consumed for cement production activities**
165556.9

**MWh fuel consumed at the kiln**
165556.9

**MWh fuel consumed for the generation of heat that is not used in the kiln**
0

**MWh fuel consumed for the self-generation of electricity**
<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**
<Not Applicable>

## C8.2d

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

**Biomass Municipal Waste**

**Emission factor**
92.8

**Unit**
kg CO2 per GJ

**Emission factor source**
WBCSD Cement Sustainability Initiative (CSI) Cement CO2 and Energy Protocol Version 3.1

**Comment**

**Coal**

**Emission factor**
96

**Unit**
kg CO2 per GJ

**Emission factor source**
WBCSD Cement Sustainability Initiative (CSI) Cement CO2 and Energy Protocol Version 3.1

**Comment**

**Heavy Gas Oil**

**Emission factor**
77.4

**Unit**
kg CO2 per GJ

**Emission factor source**
WBCSD Cement Sustainability Initiative (CSI) Cement CO2 and Energy Protocol Version 3.1

**Comment**

**Industrial Wastes**

**Emission factor**
83

**Unit**
kg CO2 per GJ

**Emission factor source**
WBCSD Cement Sustainability Initiative (CSI) Cement CO2 and Energy Protocol Version 3.1

**Comment**

**Lignite Coal**

**Emission factor**
101

**Unit**
kg CO2 per GJ

**Emission factor source**
WBCSD Cement Sustainability Initiative (CSI) Cement CO2 and Energy Protocol Version 3.1

**Comment**

**Natural Gas**

**Emission factor**
56.1

**Unit**
kg CO2 per GJ

**Emission factor source**
WBCSD Cement Sustainability Initiative (CSI) Cement CO2 and Energy Protocol Version 3.1

**Comment**

**Petroleum Coke**

**Emission factor**
92.8

**Unit**
kg CO2 per GJ

**Emission factor source**
WBCSD Cement Sustainability Initiative (CSI) Cement CO2 and Energy Protocol Version 3.1

**Comment**

**Tires**

**Emission factor**
85

**Unit**
kg CO2 per GJ

**Emission factor source**
WBCSD Cement Sustainability Initiative (CSI) Cement CO2 and Energy Protocol Version 3.1

**Comment**

**Waste Oils**

**Emission factor**
74

**Unit**
kg CO2 per GJ

**Emission factor source**
WBCSD Cement Sustainability Initiative (CSI) Cement CO2 and Energy Protocol Version 3.1

**Comment**

**Other**

**Emission factor**
110

**Unit**
kg CO2 per GJ

**Emission factor source**
WBCSD Cement Sustainability Initiative (CSI) Cement CO2 and Energy Protocol Version 3.1

**Comment**
Sewage sludge

## C8.2e

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

| | Total Gross generation (MWh) | Generation that is consumed by the organization (MWh) | Gross generation from renewable sources (MWh) | Generation from renewable sources that is consumed by the organization (MWh) |
|---|---|---|---|---|
| Electricity | 93104.6 | 93104.6 | 6607.2 | 6607.2 |
| Heat | | | | |
| Steam | | | | |
| Cooling | | | | |

## C-CE8.2e

**(C-CE8.2e) 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 | 93104.6 | 93104.6 |
| Heat | | |
| Steam | | |

## C8.2f

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

**Basis for applying a low-carbon emission factor**
Off-grid energy consumption from an on-site installation or through a direct line to an off-site generator owned by another company

**Low-carbon technology type**
Wind

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

**MWh consumed associated with low-carbon electricity, heat, steam or cooling**
6607

**Emission factor (in units of metric tons CO2e per MWh)**
0

**Comment**

# C9. Additional metrics

## C9.1

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

## C-CE9.6

**(C-CE9.6) Disclose your organization's low-carbon investments for cement production activities.**

**Investment start date**
December 1 2017

**Investment end date**
June 30 2018

**Investment area**
Property, plant and equipment

**Technology area**
Fuel switching

**Investment maturity**
Large scale commercial deployment

**Investment figure**
2036000

**Low-carbon investment percentage**
0 - 20%

**Please explain**
This investment enables Canakkale Plant to utilise more shredded tyres as alternative fuel substituting coal to burn in kilns. The result is emitting low carbon in cement production.

---

**Investment start date**
June 4 2015

**Investment end date**
December 29 2016

**Investment area**
Property, plant and equipment

**Technology area**
Other, please specify (Renewable energy (Wind Turbine))

**Investment maturity**
Large scale commercial deployment

**Investment figure**
8932000

**Low-carbon investment percentage**
0 - 20%

**Please explain**
The wind turbine investment, as the first one in Turkish cement industry, having 15 MW capacity, provides the Plant to produce electricity from a renewable and clean source. The turbine supplies 1,8% of the total energy need of Plant.

---

**Investment start date**
March 3 2015

**Investment end date**
September 10 2015

**Investment area**
Property, plant and equipment

**Technology area**
Carbon capture and storage (CCS)

**Investment maturity**
Applied research and development

**Investment figure**
500000

**Low-carbon investment percentage**
0 - 20%

**Please explain**
This R&D project has been developed with academicians in Canakkale University. The aim is to produce Microalgae with the help of kiln exhaust gases, mainly the CO2. This is a CCS project clearly having the potential to mitigate CO2 emissions

---

## C10. Verification

## C10.1

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

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

## C10.1a

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

**Scope**
Scope 1

**Verification or assurance cycle in place**
Annual process

**Status in the current reporting year**
Complete

**Type of verification or assurance**
Limited assurance

**Attach the statement**
pwc_heidelbergcement_ag_-_csi_indicators_independent_limited_assurance_report_cy_2018.pdf

**Page/ section reference**
The assurance statement of HeidelbergCement AG includes Turkey operation. Page 5. The clinker, integrated cement, slag grinding and cement grinding plants which are with 100% included in the HeidelbergCement Group balance sheet as of the 31st of December 2018 are consolidated at 100% with the exception of the Amvrosiyivka plant in Ukraine.

**Relevant standard**
ISAE3000

**Proportion of reported emissions verified (%)**
100

**Scope**
Scope 2 location-based

**Verification or assurance cycle in place**
Annual process

**Status in the current reporting year**
Complete

**Type of verification or assurance**
Limited assurance

**Attach the statement**

**Page/ section reference**
The assurance statement of HeidelbergCement AG includes Turkey operation. Page 5. The clinker, integrated cement, slag grinding and cement grinding plants which are with 100% included in the HeidelbergCement Group balance sheet as of the 31st of December 2018 are consolidated at 100% with the exception of the Amvrosiyivka plant in Ukraine.

**Relevant standard**
ISAE3000

**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?**
No, we do not verify any other climate-related information reported in our CDP disclosure

# C11. Carbon pricing

## C11.1

**(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?**
No, but we anticipate being regulated in the next three years

## C11.1d

**(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?**

As we have in our policy, strategy and vision, we are working for low carbon production by ensuring energy efficiency, increasing the use of alternative raw materials and alternative fuel.

In addition, actively participate with policy engagement activities. E.g. the PMR Turkey (Partnership for Market Readiness) Project. Specifically, Turkey seeks the PMR's help in realizing its vision for market-based mechanisms to mitigate GHG.

## 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, 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**

5

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

10

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

10

**Rationale for the coverage of your engagement**

Supplier means business-partners for Akçansa. Hence, we do care about their awareness and business-models. Our subcontractor auction criteria, 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 give subcontractors sustainability trainings and aim to increase their awareness and interest on climate-related issues and let them consider adapting low-carbon future.

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

**Comment**

## C12.1c

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

Akçansa is closely working with the universities (ITU, Sabancı University) and R&D institute TUBITAK to create and to 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 gas flu 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.
We are involved in working groups and projects 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)
We give opinions in the regulations changes, lobbying activities in relevant authorises develop projects and involve in projects, work to raise awareness and knowledge about climate change and sustainability, and support the public through working groups for COPs.
For example, we have been involved in a project named The Materials Marketplace, initiated by WBCSD Turkey, which aims company-to-company industrial reuse and contribute to the “circular economy”. There is a cloud-based platform and traditional and non-traditional industrial waste streams are matched with companies’ need.
This project leads to minimize waste that sent to landfills, save the energy and mitigate natural resource using.
We aim to minimize our impact on climate change and contribute to environment by using new alternative raw materials and fuels.

## C12.3

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

## C12.3a

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

| Focus of legislation | Corporate position | Details of engagement | Proposed legislative solution |
|---|---|---|---|
| Mandatory carbon reporting | Support with major exceptions | Akçansa engages in contributing in the issuance of mandatory carbon reporting regulation which includes cement industry emission reporting. Akçansa environmental department contributes in the preparation of the content of the reporting guideline, to ensure cement industry calculates and report in a correct method. | Based on, the Turkish MRV regulation, verification process has been done for every year. |
| Cap and trade | Neutral | Turkey profits from a World Bank funding on Carbon Market Readiness Partnership program (PMR). Akcansa support the Ministry of Environment and Urbanism on the implementation of this pilot program | PMR Project has not been finalized yet |
| Energy efficiency | Support with minor exceptions | Akcansa support the energy efficiency policy, and position itself in leveraging the industry by promoting the best practices at public speeches and seminars. | There are energy efficiency related regulations, no further proposal yet. |

## C12.3e

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

Akçansa is closely working with the universities (ITU, Sabancı University) and R&D institute TUBITAK to create and to 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 gas flu 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.

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For example, we have been involved in a project named The Materials Marketplace, initiated by WBCSD Turkey, which aims company-to-company industrial reuse and contribute to the “circular economy”. There is a cloud-based platform and traditional and non-traditional industrial waste streams are matched with companies’ need.
This project leads to minimize waste that sent to landfills, save the energy and mitigate natural resource using.
We aim to minimize our impact on climate change and contribute to environment by using new alternative raw materials and fuels.

## C12.3f

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

Akçansa puts 2020 sustainability ambitions which covers CO2 reduction, low carbon product, Environmental Product Declaration targets, which provide clear direction for the activities. Executive committee and the sustainability committee periodically check the progress. The results are shared with the stakeholders through sustainability report available on Akçansa web site. Additionally, all personal targets available in the scorecards are connected to the corporate sustainability targets.

CO2 emissions are calculated and reported regularly to top management as well as HeidelbergCement. The official GHG emission report issued to Ministry of Environment, explaining all details of raw materials, fuels, process flow and process conditions was verified by a 3rd party consultant which has been accredited by Ministry of Environment. The verified report issued to Ministry

## 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).**

# C14. Signoff

## C-FI

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

Akçansa vision statement "Sustainable growth beyond all limits" reflects Company's sustainability strategy which is in line with Company's business strategy. 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. Our climate change strategy mainly focuses on mitigating CO2 through maximizing alternative fuels and biomass, decreasing rate of clinker in cement and increasing energy efficiency.  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. We are participatory of the UN Global Compact, UN Women's Empowerment Principles, CDP Climate Change/Water programs and is the member of WBCSD Turkey. In year 2019, we will set our 2030 Sustainability Targets which will include climate-related targets of company such as alternative fuel and biomass use, clinker/cement ration and energy efficiency.

## C14.1

**(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.**

| | Job title | Corresponding job category |
|---|---|---|
| Row 1 | 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**

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

**Please confirm below**
I have read and accept the applicable Terms