

# Welcome to your CDP Climate Change Questionnaire 2020

## C0. Introduction

### C0.1

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

Şişecam Group, the foundations of which were laid by Mustafa Kemal Atatürk in 1935 is an industrial group with the main activity fields of glass. Established by İŞBANK, Şişecam initially set out to meet the requirements of the country as regards to glass products; in the 1960's, turned its attention towards exports on the principle that "the whole world is our market". In the 1970's and 1980's the Group diversified its activities and expanded further in the global markets. Today, as a result of specialization and highly competitive operations, Şişecam Group took its place among the leading glass manufacturers in the world, in business lines covering all basic fields of glass such as float glass, tableware, glass packaging and glass fiber. Şişecam Group with a goal to become one of the top three companies in the global glass industry, ambitiously produces initiatives towards improvement in economic axis, or in other words, initiatives directed at enhancing productivity, efficiency and profitability. As one of the biggest companies working in a wide extent of production in Turkey and other countries, Şişecam Group has always considered the social and environmental awareness and performance as the other two key pillars of sustainable development beside economic performance. Compliance to social and environmental legislations and reduction of environmental impacts of the processes are always taken into account during the decision making step of investments. Environmental, social and economic impacts of the processes are evaluated and sustainable solutions are considered. This approach is considered as one of the pillars of Şişecam's strategic management and is integrated in every phase of its work processes. Şişecam actively pursues the UN Sustainable Development Goals (UN SDGs) especially Goal 5-6-7-8-9-12-13-15-17 and related principles are integrated into all the operations globally, taking into consideration the SDGs performance indicators. All studies are conducted with a focus on energy efficiency, renewable energy use, carbon emissions, waste recovery and are prioritized within the framework of our sustainability strategy. These targets are realized within an effective governance structure. In this respect, in Şişecam and its subsidiary companies, all environmental issues including compliance with the environmental legislation are handled within the framework of Şişecam's Environmental and Energy Policy, declared as: Şişecam, as an organization aware of its responsibility towards the protection of environment, believes in the need to maintain the world as a livable place for coming generations. This approach is considered as the corner stone of Şişecam's strategic management and is integrated in every phase of its processes. Our aim is to carry out all environmental protection activities in Şişecam within a framework of an Environmental Management System, by taking into account the sustainability principles and improving the system continuously with the support of all our employees and stakeholders. All Group companies' operations are in line with ISO 14001 Environmental Management System and ISO 50001 Energy Management System

principles. The Group consists of companies serving in diverse activity fields related to different types of glass:

**Flat Glass:** Carrying out the activities of Sisecam Group in the field of flat glass. Şişecam Flat Glass operates in the fields of architectural glass (flat glass, patterned glass, mirror, laminated glass and coated glass), automotive glass and glass for other vehicles, encapsulated glass, solar glass, home appliances glass.

**Glassware:** Carrying out the activities of Sisecam Group in the field of tableware, Paşabahçe Cam Sanayii ve Ticaret A.Ş. performs design, production, marketing and sale of table, kitchen articles, and souvenirs made of glass, which are needed by domestic and foreign markets. It carries on its activities in the design, production, marketing and sale as main business fields of glass household articles.

**Glass Packaging:** Carrying out the activities of Sisecam Group in the field of glass packaging, Şişecam Glass Packaging produces designed glass packaging of different colors and sizes for the food, beverage, alcoholic drinks, pharmaceutical and cosmetic sectors.

**Chemicals:** Carrying out the activities of producing soda derivatives and chromium chemicals, glass fiber, industrial raw materials, electricity, Vitamin K3 derivatives and sodium metabisulfite.

Besides its activities in Turkey, Şişecam became a global company with its facilities in Bulgaria, Russia, Georgia, Ukraine, Egypt, Bosnia, Germany, Slovakia, Hungary, Romania, India and Italy.

## 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
Reporting year	January 1, 2019	December 31, 2019	Yes	1 year

## C0.3

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

- Bulgaria
- Italy
- Turkey

## C0.4

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

- TRY

## C0.5

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

Financial control

## C-CH0.7

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

Row 1

**Bulk organic chemicals**

**Bulk inorganic chemicals**

Soda ash

**Other chemicals**

Other, please specify

Glass 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
Other C-Suite Officer	"Chief Strategy Officer" is responsible for management of sustainability strategy. Chief focuses on climate change, sustainability strategy and sustainability projects, environmental management and quality management within Şişecam. That's why "Chief Strategy Officer" is selected as the responsible individual for climate-related issues.

## C1.1b

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	<ul style="list-style-type: none"> <li>Reviewing and guiding strategy</li> <li>Reviewing and guiding risk management policies</li> <li>Reviewing and guiding business plans</li> <li>Setting performance objectives</li> <li>Monitoring implementation and performance of objectives</li> <li>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</li> </ul>	<p>Şişecam Group’s Sustainability Committee works toward increasing communication between working groups and companies within the Group on matters of sustainability and enables the implementation of joint projects for cohesiveness and synergy. The main responsibilities of the Committee include, integrating sustainability principles into Şişecam’s processes, determining and implementing operational improvement activities, preparing and circulating the Corporate Sustainability Strategy, and coordinating, directing and supervising the activities of sub-working groups within the Sustainability Committee. As matters arise, Sustainability Committee reports to the Board.</p>

## C1.2

**(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.**

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Sustainability committee	Both assessing and managing climate-related risks and opportunities	Quarterly
Environment/ Sustainability manager	Managing climate-related risks and opportunities	More frequently than quarterly

Other C-Suite Officer, please specify Chief Strategy Officer	Other, please specify Mainstreaming sustainability and climate change into business strategy	More frequently than quarterly
Other committee, please specify Corporate Coordination Board on Climate Change	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).**

Şişecam Group's Sustainability Committee works toward increasing communication between working groups and companies within the Group on matters of sustainability and enables the implementation of joint projects for cohesiveness and synergy. The Committee directly reports to the CEO. The main responsibilities of the Committee include, integrating sustainability principles into Şişecam's processes, determining and implementing operational improvement activities, preparing and circulating the Corporate Sustainability Strategy, defining sustainability targets and coordinating, directing and supervising the activities of sub-working groups within the Sustainability Committee. In order to increase the efficiency of the projects that are managed multidisciplinary, it is essential to establish working groups composed of professionals from different departments for each group. The working groups within the committee (Working Group on the Environment, Production Technologies and Energy, Occupational Health and Safety, Innovation & Digitalisation, Diversity and Inclusion, Corporate Social Responsibility) monitors and take necessary actions for climate - related issues.

Şişecam Group's Sustainability Directorate directly reports to Chief Strategy Officer. Sustainability Directorate focuses on coordinating the corporate sustainability activities by connecting teams responsible for production, communications, human resources, infrastructure, procurement and quality. At the same time, it monitors climate-related issues and implements innovative practices relating to corporate sustainability reporting, supply chain sustainability, sustainability training programs, measurement of sustainability efficiency, environment&quality management, etc.

The Group Climate Change Coordination Board (CCCB) was established in 2019, consisting of Group Presidencies, Strategy Presidency, Risk Management and Internal Audit Presidency, Construction Directorate, Financial Affairs and Purchasing Presidencies. "Group Climate Change Governance Procedure", which defines the duties and responsibilities of the council, was released and CCCB activities were initiated. As part of the activities under CCCB, in geographies where the Group operates, the aim is to:

- (Compliance/adaptation) Evaluating the sensitivity towards the physical effects of climate change, and identifying the priorities at the physical, financial and operational level in order to adapt to such effects,

- (Reduction) Identifying the emission reduction potentials in the field of climate change, and addressing low-carbon production techniques and technologies,
- Closely following international, regional and national developments and obligations related to climate change processes, and incorporating and effectively managing the relevant processes under the Group. Alongside these efforts, preparations were initiated for the Climate Change Integrated Strategy of Şişecam Group.

## C1.3

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

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Şişecam Corporate Rewarding Mechanism evaluates the successful projects that apply to have an award. Emissions reduction projects - Energy reduction projects and Efficiency projects are evaluated.

### C1.3a

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

Entitled to incentive	Type of incentive	Activity incentivized	Comment
All employees	Monetary reward	Emissions reduction project Energy reduction project Efficiency project Behavior change related indicator	Şişecam Corporate Rewarding Mechanism evaluates the successful projects that apply to have an award. Emissions reduction projects - Energy reduction projects and Efficiency projects are evaluated.

## C2. Risks and opportunities

### C2.1

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

Yes

## C2.1a

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

	From (years)	To (years)	Comment
Short-term	1	3	
Medium-term	3	5	
Long-term	5	20	

## C2.1b

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

Climate change coordination board screens and analyses potential and ongoing strategic regulatory and financial impacts on our business. As a response to those, necessary measures are considered within the investment projects and operational strategies. In particular EU ETS short -medium-long term impacts, EU carbon border tax , carbon pricing in the geographies of operations, adaptation risks are closely screened and followed up.

## C2.2

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

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**Value chain stage(s) covered**

Direct operations

**Risk management process**

Integrated into multi-disciplinary company-wide risk management process

**Frequency of assessment**

Annually

**Time horizon(s) covered**

Short-term

Medium-term

Long-term

**Description of process**

Company wide risk management practices including surveys, feedback mechanisms are systematically and actively in place by use of digital platforms and awareness bulletins are communicated frequently on the basis of risk appetite.

**Value chain stage(s) covered**

Direct operations

**Risk management process**

A specific climate-related risk management process

**Frequency of assessment**

More than once a year

**Time horizon(s) covered**

Medium-term

Long-term

**Description of process**

Physical impacts of climate change as part of adaptation measures for each facility of Şişecam has been screened as well as mitigation risks are overviewed on regular basis and upon any regulatory changes.

**C2.2a**

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Turkey's Energy Efficiency Law, Energy Strategy Plan and National Climate Change Action Plan guided the industry for the energy targets. In order to reduce energy consumption, efficiency projects are applied and EU ETS regulations are followed up.
Emerging regulation	Relevant, always included	Şişecam follows up the project on Partnership for Market Readiness (PMR), governed by Ministry of Environment and Urbanism and attends workshops related to this project. The key objective of the project is to identify alternative "Market Based Instrument" to cope with climate change and to be implemented in Turkey. Şişecam comments on draft "Climate Law" and "ETS Regulation". Upcoming EU Carbon border tax, Green Deal strategy is followed up.
Technology	Relevant, always included	In accordance with the developments in technology, in order to protect market share, Şişecam follows up the technology and invest in research and development such as light weight glass, electric /hybrid furnaces etc.
Legal	Relevant, always included	Turkey's Energy Efficiency Law, Energy Strategy Plan and National Climate Change Action Plan guided the industry for the energy targets. In order to reduce energy consumption, efficiency projects are applied. Moreover, Şişecam follows up the revised National Energy Strategy Plan and related regulations.

Market	Relevant, always included	In order to protect market share, Şişecam follows up the technology and invest in research and development. Supported with Şişecam's circular economy vision, increasing recovery of glass cullet which reduces GHG emissions is always prioritized.
Reputation	Relevant, always included	Due to increased public concern both in Turkey and in rest of the world, climate change is an important issue in managing corporate reputation. Today, it is critical that companies safeguard their reputations through effective communications with all their stakeholders about their environmental performance on climate change issue. This risk may impact Şişecam's reputation also. Moreover, Şişecam focuses on sustainability of the operations, development of climate friendly products and introduces online applications to the partners to ensure optimum selection of climate friendly products. Şişecam Sustainability Directorate directly reports to Chief Strategy Officer and has a robust sustainability approach. As part of our business operations, all relevant risks effecting Corporate Strategy including sustainability and reputational aspects are overviewed and integrated into management of change process. Şişecam has access to corporate databases for monitoring all peer views and corporate scores on financial and sustainability aspects
Acute physical	Relevant, sometimes included	Globally, much more extreme and variable weather conditions are expected in the future. Floods, sudden temperature rises and decreases forms a risk for our plants and our supply chain.
Chronic physical	Relevant, sometimes included	IPCC SRES emission scenarios and physical impacts on Şişecam's geographical operations are followed up.

## C2.3

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

Yes

### C2.3a

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

**Identifier**

Risk 1

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

Direct operations

**Risk type & Primary climate-related risk driver**

Current regulation

Carbon pricing mechanisms

**Primary potential financial impact**

Increased indirect (operating) costs

**Company-specific description**

In accordance with decisions and negotiations regarding Paris Agreement, the Republic of Turkey and EU including Bulgaria presented their Nationally Determined Contribution (NDC) towards achieving the ultimate objective of the United Nations Framework Convention on Climate Change . Turkey committed up to 21 percent reduction in GHG emissions from the Business as Usual (BAU) level by 2030. The European Union and its 28 Member States including Bulgaria submitted a joint NDC which is at least 40% domestic reduction in GHG emissions by 2030 compared to 1990. Related Ministries are working on many strategies and action plans to combat climate change which will directly influence business sectors. Şişecam's Climate Change Coordination Board reviews impact analyses on Şişecam businesses and relevant opportunities (importance of architectural glass for GHG reduction etc.). As a response, sectoral market strategies are updated with recognition of such impacts and opportunities.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

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

No, we do not have this figure

**Potential financial impact figure (currency)**

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

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

**Explanation of financial impact figure**

The adaptation to Paris Agreement will result in substantial future capital and operating costs, and regulated carbon quotas. If the sectors exceed their quotas related to

targets, they should purchase extra allowance (such as EUA, CER etc) which will directly result in increase of operational expenses.

### **Cost of response to risk**

65,000

### **Description of response and explanation of cost calculation**

Şişecam attends and takes an important role in workshops and meetings focused on adaptation to Paris Agreement. Şişecam implements actions related on energy efficiency projects that result in GHG emissions reduction. Şişecam follows up and contribute Glass Alliance Europe's studies on EU regulations which affect glass business. Glass Alliance Europe is an association which coordinates European glass industries' views on common environmental and regulatory challenges. Management actions related to this risk are being implemented. For example, regulatory assessment reports on climate change is prepared annually and bulletins about EUA prices is prepared monthly by Sustainability Directorate and shared with all members of Şişecam Group for their references and use while conducting their procurement and investment planning. Cost of management is calculated as the membership fees for Glass Alliance Europe.

### **Comment**

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### **Identifier**

Risk 2

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

Direct operations

### **Risk type & Primary climate-related risk driver**

Emerging regulation  
Carbon pricing mechanisms

### **Primary potential financial impact**

Increased indirect (operating) costs

### **Company-specific description**

Turkish Ministry of Environment and Urbanism is working on many strategies and action plans to combat climate change, which will have a direct impact to business sectors. Şişecam attends and takes an important role in workshops and meetings focused on adaptation to climate change regulations for Turkey. For Şişecam operations in Bulgaria (as an EU country) main risks are related to increase of carbon price and exclusion of glass sector from carbon leakage list. Şişecam follows up and contribute Glass Alliance Europe's studies on EU regulations which affect glass business. Glass Alliance Europe is an association which coordinates European glass industries' views on common environmental and regulatory challenges. Management actions related to this risk are being implemented.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

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

Yes, an estimated range

**Potential financial impact figure (currency)**

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

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

**Explanation of financial impact figure**

Potential alternatives to govern the carbon mechanisms nationwide (for example carbon taxes, carbon-trading systems etc.) may be implemented. This may result in extra costs for Şişecam's operations in Turkey.

For Şişecam operations in Bulgaria and Italy (as an EU country) increase of carbon price and exclusion of glass sector from carbon leakage list may result in extra costs . In response Şişecam prepared short-mid term EU-ETS strategies which includes financial exposure analysis and portfolio management of EUA budget. Phase 4 of EU-ETS has been also integrated in our strategic plan. Required EUA finance is budgetized on annual basis while EU ETS market is closely followed up regularly.

**Cost of response to risk**

0

**Description of response and explanation of cost calculation**

For example, Şişecam follows up the project on Partnership for Market Readiness (PMR), governed by Turkish Ministry of Environment and Urbanism and attends workshops related to this project. The key objective of the project is to identify alternative "Market Based Instrument" to cope with climate change and to be implemented in Turkey. Besides, in order to manage this risk, Şişecam implements actions related on energy efficiency projects that result in GHG emissions reduction. Management actions related to this risk are being implemented.

**Comment**

Şişecam, as one of the main players of the sector, attends the workshops organized by Ministry of Environment and Urbanism and gives great support by providing feedback and recommendations about emissions, quotas, carbon leakage threat and appropriate

emission control systems in the sector. The aim of these workshops is to ensure multi-stakeholders engagement to provide the necessary inputs for improvement of Turkey's position in the international negotiations.

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**Identifier**

Risk 3

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

Direct operations

**Risk type & Primary climate-related risk driver**

Current regulation

Other, please specify

Regulation on energy efficiency

**Primary potential financial impact**

Increased indirect (operating) costs

**Company-specific description**

Regarding to regulations, Turkish energy policy has made impressive progress in the last years. Turkey attaches great importance to more efficient and rational functioning of the energy sector for promoting the competitiveness of the national economy. In order to reach these targets, Laws on Energy Efficiency introduces significant obligations and sets the rules for energy management in industry. According to the law, Şişecam plants has to manage comprehensive energy audits.

As part of Şişecam Sustainability Goals, specific energy intensity of Şişecam's entire glass group has decreased 1.8% by the end of 2019 compared to the base year of 2017.

**Time horizon**

Short-term

**Likelihood**

Very likely

**Magnitude of impact**

Medium

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

Yes, an estimated range

**Potential financial impact figure (currency)**

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

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

### **Explanation of financial impact figure**

Turkey's Energy Efficiency Law, Energy Strategy Plan and National Climate Change Action Plan guided the industry for the energy targets. Şişecam Group is highly sensitive to all kinds of energy related policies and limitations. Limitations or taxes on fuel/energy usage will affect operations directly and will limit productivity. The magnitudes of these risks are still not clear.

### **Cost of response to risk**

0

### **Description of response and explanation of cost calculation**

For example, Sustainable Energy Monitoring System was established in the factories in Turkey in order monitor online energy consumption. The system is managed centrally at the Headquarter level, and it allows a comparative management and identification of potential improvement instantaneously. Energy efficiency projects are considered as one of the most important investment items. All Group factories benefiting from the system are also ISO 50001 certified. The Group's core principle is to select high efficient equipment as part of its sustainable investment strategy. Energy audits are another important tool for identifying energy saving opportunities. Management actions related to these risks are being implemented. Investments and costs for energy efficiency projects is integrated in the budget.

### **Comment**

## **C2.4**

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

Yes

## **C2.4a**

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

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### **Identifier**

Opp1

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

Downstream

### **Opportunity type**

Products and services

**Primary climate-related opportunity driver**

Development and/or expansion of low emission goods and services

**Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

**Company-specific description**

With regulations such as Energy Efficiency Law and Regulation on Energy Performance in Buildings in Turkey, energy efficiency in buildings are supported. Using value added energy efficient construction products became important by this way. All new buildings must meet minimum design requirements for energy efficiency and get Energy Performance Certificate. Existing buildings should get Energy Performance Certificate till 2020. This creates an opportunity for sales of Şişecam's energy efficient products. For Şişecam Flat Glass' architectural glass products Environmental Product Declaration (EPD)s in relation to the SDG 12 on Responsible Consumption and Production, and in accordance with the EN 15804 European norms, are prepared. These products provide the greatest contribution to forming sustainable green buildings. The EPDs were made available to stakeholders. Şişecam Flat Glass is the first company in the flat glass sector in Turkey receiving the EPD.

**Time horizon**

Short-term

**Likelihood**

Very likely

**Magnitude of impact**

Medium-high

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

Yes, an estimated range

**Potential financial impact figure (currency)**

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

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

**Explanation of financial impact figure**

This will create opportunities for the market growth of high performance, added value products. Increase in demand for Şişecam's energy efficient products such as low-e, tентeseol titanium, solar control and thermal insulation glass is expected.

**Cost to realize opportunity**

### **Strategy to realize opportunity and explanation of cost calculation**

Sisecam implements related activities studies and projects by: (a) Lobbying activities: In order to introduce the contribution of its products to energy saving and economy, Şişecam has been an active member of several associations such as Glass for Europe, Association of Turkish Building Material Producers (IMSAD) and Association of Thermal Insulation, Waterproofing, Sound Insulation and Fireproofing Material Producers, Suppliers and Applicators (IZODER). Group also takes part in several organizations. b) Collaboration with Policy Makers: As the most important sector representative, Şişecam collaborates with experts from Ministry of Environment and Urbanism, Ministry Of Science Industry and Technology and Ministry of Energy and Natural Resources. c) Research and development activities: Şişecam focuses on its research and development activities for developing new environment friendly high added value products. d) Commercials: Advertisement campaign of products which provided advanced level of isolation compared to standard double glasses is managed. Mentioned actions are implemented.

### **Comment**

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#### **Identifier**

Opp2

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

Upstream

#### **Opportunity type**

Products and services

#### **Primary climate-related opportunity driver**

Shift in consumer preferences

#### **Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

#### **Company-specific description**

Voluntary regulation on 'Certification of sustainable sites with sustainable green buildings' is published by Ministry of Environment and Urbanism. Şişecam also follows up te developments against the national strategy on sustainable cities. The regulation aims to set the principles and procedures related to evaluate and certify green buildings, green sites. This creates an opportunity for Şişecam's energy efficient products.

#### **Time horizon**

Short-term

#### **Likelihood**

More likely than not

**Magnitude of impact**

Medium-low

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

Yes, an estimated range

**Potential financial impact figure (currency)**

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

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

**Explanation of financial impact figure**

With this regulation main concepts of green buildings such as energy efficiency, renewable energy, lighting, local material, ecolabels get more importance than before. This will directly influence the demand for high value added products like low e, solar control, thermal insulation and solar control glasses.

**Cost to realize opportunity**

**Strategy to realize opportunity and explanation of cost calculation**

For example, Şişecam implements lobbying activities, seminars and trainings in order to emphasize the importance of design and glass selection in the construction sector. Moreover, Şişecam Flat Glas obtained Environmental Product Declarations (EPD) for its main products. Also, "Glass Solutions For Green Buildings Catalog- The Right Glass Solutions in Green Building" booklet informs business partners and enable the right choice of glass. Mentioned actions are implemented.

**Comment**

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**Identifier**

Opp3

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

Upstream

**Opportunity type**

Products and services

**Primary climate-related opportunity driver**

Shift in consumer preferences

**Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

### **Company-specific description**

Due to increasing awareness, Şişecam's customer profile has been changing. Customers trade with companies that invest on sustainability. Şişecam manages a lot of projects on glass recycling, energy efficiency production etc. and inform its stakeholders on a defined period.

### **Time horizon**

Short-term

### **Likelihood**

Virtually certain

### **Magnitude of impact**

Medium-high

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

Yes, an estimated range

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

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

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

### **Explanation of financial impact figure**

Şişecam Group is one of the promising companies that enable greenhouse gas emission reduction and energy saving by its sustainability projects and main products. This awareness, is expected to increase the demand for Şişecam's energy efficient products such as low-e and solar control glass and provide R&D activities on this issue. Besides, consumption of glass containers and bottles due to its endless recycle capability compared to alternative packaging materials, is expected to increase.

### **Cost to realize opportunity**

### **Strategy to realize opportunity and explanation of cost calculation**

Sisecam implements related activities, studies and projects with the aim of differentiating its products in the growing competitive environment, increasing the awareness towards its brands and widening their utilization. Şişecam implements social responsibility projects such as Glass and Glass Again. Sustainability Report is an other example to respond accordingly. Sustainability reports are published for the operations in Turkey and abroad (Şişecam Group, Şişecam Flat Glass, Şişecam Automotive, Şişecam Glass Packaging, Paşabahçe and Soda Sanayii A.Ş.) Moreover, Şişecam takes part in Istanbul Stock Exchange Sustainability Index (BIST SI) which also evaluates climate change performance indicators in detail.

Şişecam completed its branding studies covering its current product range to be employed commonly in all markets. In order to obtain consumer feedback, consumer surveys are performed, analysed and strategic plans are issued accordingly. For example, with its experienced team, Şişecam Flat Glass offers glass consultancy to project decision makers such as architects, facade consultants, investors and contractors on their projects and develops solution offers according to project requirements. For new products, R&D studies and marketing of products are going on. Mentioned actions are implemented.

**Comment**

## C3. Business Strategy

### C3.1

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

Yes, and we have developed a low-carbon transition plan

#### C3.1a

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

Yes, qualitative and quantitative

#### C3.1b

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

Climate-related scenarios and models applied	Details
Nationally determined contributions (NDCs)	<p>In accordance with decisions regarding Paris Agreement, the Republic of Turkey presented its Intended Nationally Determined Contribution (INDC) towards achieving the ultimate objective of the United Nations Framework Convention on Climate Change and clarifying information, whereby Turkey is committed up to 21 percent reduction in GHG emissions from the Business as Usual (BAU) level by 2030. Ministry of Environment and Urbanism is working on many strategies and action plans to combat climate change which will directly influence business sectors. However, it is still not clarified how the target will be distributed to different sectors. This will bring extra responsibilities for Şişecam.</p> <p>Şişecam attends and takes an important role in workshops and meetings focused on adaptation to Paris Agreement. Şişecam follows up the project on</p>

	<p>Partnership for Market Readiness (PMR) Project governed by Ministry of Environment and Urbanism and attends workshops related to this project. Moreover Şişecam takes part in scenarios related to carbon emissions management and provides feedback. In order to manage the risk regarding emissions trading system and carbon border tax, Şişecam started working on climate related scenario analysis. This analysis focuses on different emission scenarios with regard to different production scenarios till 2030. Moreover, Şişecam implements efficiency projects that result in GHG emissions reduction. Management actions related to this risk are being implemented.</p>
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### C3.1d

**(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.**

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	<p>Şişecam has identified the opportunities for climate change mitigation through its high value added products such as low e, tentesol titanium, solar flat glass etc. Further, Şişecam recently developed first of its kind glassware which is made from 100% glass cullet. This product (recycled tableware) reduces GHG emissions and demand for raw materials.</p> <p>"Chief Strategy Officer" is responsible for management of sustainability strategy. Chief focuses on climate change, sustainability strategy and sustainability projects, environmental management and quality management within Şişecam. That's why "Chief Strategy Officer" is selected as the responsible individual for climate-related issues.</p> <p>Sisecam launched its sustainability pathway 'Care for Next' at the II International Sustainability Workshop in 2019. In the workshop, climate change risks and opportunities are analyzed.</p>
Supply chain and/or value chain	Evaluation in progress	<p>Sustainable supply chain management is among the primary focus areas of Şişecam. In 2019, Environmental, Social and Governance (ESG) priorities in the supply chain started to be addressed in all phases of supplier management including evaluation, implementation, monitoring and development. Accordingly, the relevant processes were reviewed and supplier management systems, including ESG dimensions,</p>

		were put into operation. Evaluation process is ongoing and it is expected to be completed in 2 years.
Investment in R&D	Yes	Şişecam invests in low carbon product research and developments activities. Şişecam recently developed first of its kind glassware which is made from 100% glass cullet. This product (recycled tableware) reduces GHG emissions and demand for raw materials. In accordance with the developments in technology, in order to protect market share, Şişecam follows up the technology and invest in research and development such as light weight glass, electric /hybrid furnaces etc.
Operations	Yes	Şişecam continue operations with the aim of reaching GHG reduction target as part of its sustainability strategy. In order to decrease GHG emissions, Şişecam manages projects in order to increase glass cullet usage. All studies are conducted with a focus on energy efficiency, renewable energy use, carbon emissions, waste recovery and are prioritized within the framework of our sustainability strategy. These targets are realized within an effective governance structure.

### C3.1e

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

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Capital expenditures	As part of EU Green Deal, which has been started in 2019, demand for Şişecam's products serving for low carbon economy (low e, tentesol titanium, solar glass etc.) is expected to increase which will result in increase of revenues in five years time. As an example Şişecam has identified the production line investments according to the increase of demand.

### C3.1f

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

## C4. Targets and performance

### C4.1

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

Intensity target

### C4.1b

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

---

**Target reference number**

Int 1

**Year target was set**

2018

**Target coverage**

Business division

**Scope(s) (or Scope 3 category)**

Scope 1+2 (location-based)

**Intensity metric**

Metric tons CO<sub>2</sub>e per metric ton of product

**Base year**

2017

**Intensity figure in base year (metric tons CO<sub>2</sub>e per unit of activity)**

0.67

**% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure**

55

**Target year**

2022

**Targeted reduction from base year (%)**

5

**Intensity figure in target year (metric tons CO<sub>2</sub>e per unit of activity) [auto-calculated]**

0.6365

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

5

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

0

**Intensity figure in reporting year (metric tons CO2e per unit of activity)**

0.6581

**% of target achieved [auto-calculated]**

35.5223880597

**Target status in reporting year**

Underway

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

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

**Please explain (including target coverage)**

Target is to reduce GHG emission intensity of glass production by 5% from 2017 baseline till 2022

## C4.2

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

Other climate-related target(s)

## C4.2b

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

---

**Target reference number**

Oth 1

**Year target was set**

2018

**Target coverage**

Business division

**Target type: absolute or intensity**

Intensity

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

Energy consumption or efficiency

GJ

**Target denominator (intensity targets only)**

metric ton of product

**Base year**

2017

**Figure or percentage in base year**

8

**Target year**

2022

**Figure or percentage in target year**

7.8

**Figure or percentage in reporting year**

**% of target achieved [auto-calculated]**

**Target status in reporting year**

Underway

**Is this target part of an emissions target?**

No

**Is this target part of an overarching initiative?**

No, it's not part of an overarching initiative

**Please explain (including target coverage)**

Target is to reduce annual energy consumption intensity by 2% till 2022 for glass production facilities (GJ/ton melted glass)

### C4.3

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

Yes

### C4.3a

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

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
--	-----------------------	------------------------------------------------------------------------------------

Under investigation		
To be implemented*	6	1,728
Implementation commenced*	6	1,728
Implemented*	9	60,443
Not to be implemented		

## C4.3b

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

---

### Initiative category & Initiative type

Energy efficiency in production processes  
Process optimization

### Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)

13,748

### Scope(s)

Scope 2 (location-based)

### Voluntary/Mandatory

Voluntary

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

17,888,408

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

82,940,950

### Payback period

4-10 years

### Estimated lifetime of the initiative

21-30 years

### Comment

Energy efficiency projects in Trakya Mersin Plant (electricity generation from waste heat and solar plant - decrease of electricity production in bath and annealing process)

---

### Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

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

1,129

**Scope(s)**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

1,004,157

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

0

**Payback period**

<1 year

**Estimated lifetime of the initiative**

>30 years

**Comment**

Energy efficiency projects in Trakya Trakya Plant (savings in pressurized air and lighting)

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Process optimization

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

12,659

**Scope(s)**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

14,320,846

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

30,676,307

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

>30 years

**Comment**

Energy efficiency projects in Trakya Yenişehir Plant (savings in cooling fan, waste heat recovery, water cooling, compressor)

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Process optimization

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

2,171

**Scope(s)**

Scope 1  
Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

0

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

0

**Payback period**

<1 year

**Estimated lifetime of the initiative**

>30 years

**Comment**

Energy efficiency projects in Trakya Polatlı Plant (savings in fuel consumption, electricity consumption, kompressors)

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Process optimization

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

10,055

**Scope(s)**

Scope 1

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

19,877,251

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

60,726,733

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

>30 years

**Comment**

Energy efficiency projects in Trakya Bulgaria Plant (waste heat recovery, savings in fuel consumption)

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Process optimization

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

8,478

**Scope(s)**

Scope 1  
Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

7,100,000

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

59,055,000

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

11-15 years

**Comment**

Energy efficiency projects in Anadolu Cam Mersin Plant (savings in cooling system, compressor, furnace modernization)

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Process optimization

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

11,315

**Scope(s)**

Scope 1  
Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

14,411,292

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

0

**Payback period**

<1 year

**Estimated lifetime of the initiative**

1-2 years

**Comment**

Energy efficiency projects in Anadolu Cam Yenisehir Plant (savings in mould cooling system, compressors)

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Process optimization

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

888

**Scope(s)**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

740,000

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

3,160,000

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

11-15 years

**Comment**

Energy efficiency projects in Anadolu Cam Eskisehir Plant (savings in compressors)

### C4.3c

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

Method	Comment
Dedicated budget for energy efficiency	Şişecam being a highly energy intensive manufacturing company, but in the same time recognizes that sustainable energy solutions (energy efficiency, renewable energy, alternative energy mix) are key for sustainability, several actions are taken corporately to respond and adopt to the increasingly competitive global business environment. Şişecam's cost of energy is between 20-25% of the total operational cost. To minimize the risks related to volatility of energy prices, access of quality and continuous energy, Şişecam proactively identifies and implements energy efficiency, renewable energy and innovative energy mix solutions. To ensure timely monitoring of the production energy efficiency, on-line electricity, natural gas etc. consumptions are monitored. Additionally, 6 MWh solar panel installation has been completed in 2017. Furthermore, annually corporate energy consumption targets are identified and periodically monitored and reported to senior management. As per the Energy Efficiency Law (no 5627), Şişecam ensures that each factory has its own energy manager who is responsible for monitoring and reporting the energy efficiency performance of the factories.
Compliance with regulatory requirements/standards	Turkish Energy Efficiency Law (no 5627) and Regulation on "Improving Energy Efficiency on Energy Usage, aim to improve industrial energy efficiency and provide energy savings in the production processes. Therefore, energy intensive sectors face with strict constraints. In accordance with decisions regarding Paris Agreement, the Republic of Turkey presented its Nationally Determined Contribution (NDC) towards achieving the ultimate objective of the United Nations

	<p>Framework Convention on Climate Change , whereby Turkey is committed up to 21 percent reduction in GHG emissions from the Business as Usual (BAU) level by 2030. Ministry of Environment and Urbanism is working on many strategies and action plans to combat climate change that will directly influence business sectors. However, it is still not clarified how the target will be distributed to different sectors. It is for sure that restrictions on greenhouse gas emissions will be applied. The Partnership for Market Readiness (PMR) Project governed by Ministry of Environment and Urbanism aims to identify potential alternatives to govern the carbon mechanisms nationwide (for example carbon taxes, carbon-trading systems etc.). To this end, the Ministry of Environment and Urbanism makes extra effort to engage private sectors in the preparations. Şişecam is actively involved in these projects and provides feedback and required technical inputs.</p>
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## 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?**

No

## 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, 2019

**Base year end**

December 31, 2019

**Base year emissions (metric tons CO<sub>2</sub>e)**

4,233,573

**Comment**

#### Scope 2 (location-based)

---

**Base year start**

January 1, 2019

**Base year end**

December 31, 2019

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

619,375

**Comment**

**Scope 2 (market-based)**

---

**Base year start**

January 1, 2019

**Base year end**

December 31, 2019

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

0

**Comment**

## C5.2

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

ISO 14064-1

## 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)**

4,233,573

**Start date**

January 1, 2019

**End date**

December 31, 2019

**Comment**

**Past year 1**

---

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

4,150,991

**Start date**

January 1, 2018

**End date**

December 31, 2018

**Comment**

## C6.2

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

**Row 1**

---

**Scope 2, location-based**

We are reporting a Scope 2, location-based figure

**Scope 2, market-based**

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

**Comment**

## C6.3

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

**Reporting year**

---

**Scope 2, location-based**

619,375

**Start date**

January 1, 2019

**End date**

December 31, 2019

**Comment**

**Past year 1**

---

**Scope 2, location-based**

516,377

**Start date**

January 1, 2018

**End date**

December 31, 2018

**Comment**

## C6.4

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

No

## C6.5

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

### **Purchased goods and services**

---

**Evaluation status**

Relevant, not yet calculated

**Please explain**

### **Capital goods**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

Not considered as a relevant category in terms of emissions due to its negligible proportion among Şişecam activities.

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

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

All the fuel and energy related activities were reported under Scope 1 and Scope 2.

### **Upstream transportation and distribution**

---

**Evaluation status**

Relevant, not yet calculated

**Please explain**

### **Waste generated in operations**

---

**Evaluation status**

Not evaluated

**Please explain**

### **Business travel**

---

**Evaluation status**

Relevant, not yet calculated

**Please explain**

### **Employee commuting**

---

**Evaluation status**

Relevant, not yet calculated

**Please explain**

### **Upstream leased assets**

---

**Evaluation status**

Relevant, not yet calculated

**Please explain**

### **Downstream transportation and distribution**

---

**Evaluation status**

Relevant, not yet calculated

**Please explain**

### **Processing of sold products**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

The vast majority of Şişecam products are ready to be consumed or distributed. Only a part of glass products (mostly flat glass and a few part of container glass) are

processed. However, reliable figures are difficult to obtain due to wide range of large and small workshops

### Use of sold products

---

#### Evaluation status

Not relevant, explanation provided

#### Please explain

Glass which is the main field of Şişecam Group is one of the most sustainable products. Formed and finished glass products are ready to use and do not directly emit or cause any greenhouse gas emissions

### End of life treatment of sold products

---

#### Evaluation status

Not evaluated

#### Please explain

### Downstream leased assets

---

#### Evaluation status

Not relevant, explanation provided

#### Please explain

Not considered as a relevant category in terms of emissions due to its negligible proportion among Şişecam activities.

### Franchises

---

#### Evaluation status

Not evaluated

#### Please explain

### Investments

---

#### Evaluation status

Not relevant, explanation provided

#### Please explain

All the investments are operationally controlled by Şişecam itself and defined in organizational boundaries. Therefore; scope 1 and scope 2 emissions of all the active (operational) Şişecam investments are reported under Scope 1 and Scope 2.

### Other (upstream)

---

#### Evaluation status

**Please explain**

**Other (downstream)**

---

**Evaluation status**

**Please explain**

## **C6.7**

**(C6.7) Are carbon dioxide emissions from biogenic 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 CO<sub>2</sub>e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.**

---

**Intensity figure**

0.00038

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO<sub>2</sub>e)**

4,852,948

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

12,921,388,996

**Scope 2 figure used**

Location-based

**% change from previous year**

14

**Direction of change**

Decreased

**Reason for change**

Decrease of intensity figure is a result of commissioning of new furnaces with higher energy performance, lower GHG benchmarks. Moreover, several emission reduction activities continued to be performed in 2019.

---

**Intensity figure**

335

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO<sub>2</sub>e)**

5,015,887

**Metric denominator**

full time equivalent (FTE) employee

**Metric denominator: Unit total**

12,636

**Scope 2 figure used**

Location-based

**% change from previous year**

2

**Direction of change**

Decreased

**Reason for change**

Decrease of intensity figure is a result of increase in FTE and total emissions compared to 2018.

## 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 CO <sub>2</sub> e)	GWP Reference
----------------	------------------------------------------------------	---------------

CO2	4,233,573	IPCC Fourth Assessment Report (AR4 - 100 year)
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## 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	3,792,181
Bulgaria	293.019
Italy	148.374

## C7.3

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

By business division

### C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
Glass production	2,257,950
Chemicals	1,910,090
Other	65.533

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

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

	Gross Scope 1 emissions, metric tons CO2e	Comment
Chemicals production activities	1,910,090	

## 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 for in Scope 2 market-based approach (MWh)
----------------	--------------------------------------------	------------------------------------------	------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------

Turkey	547.417	0	1,276,867	0
Bulgaria	57.392	0	122,456	0
Italy	14.566	0	29,329	0

## C7.6

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

By business division

### C7.6a

**(C7.6a) Break down your total gross global Scope 2 emissions by business division.**

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Glass production	529.908	0
Chemicals production	69.817	0
Other	19.651	0

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

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

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Chemicals production activities	69.817	0	

## C-CH7.8

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

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e from purchased feedstock	Explain calculation methodology
---------------------	------------------------------------------------------------------	---------------------------------

### C-CH7.8a

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

	Sales, metric tons	Comment
--	--------------------	---------

Carbon dioxide (CO2)	0	
Methane (CH4)	0	
Nitrous oxide (N2O)	0	
Hydrofluorocarbons (HFC)	0	
Perfluorocarbons (PFC)	0	
Sulphur hexafluoride (SF6)	0	
Nitrogen trifluoride (NF3)	0	

## C7.9

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

Increased

### C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption				
Other emissions reduction activities	60.443	Decreased	1.3	
Divestment				
Acquisitions				
Mergers				
Change in output	224.22	Increased	4.8	
Change in methodology				
Change in boundary	162.939	Increased	3.5	
Change in physical operating conditions				
Unidentified				
Other				

## 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 20% but less than or equal to 25%

### C8.2

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

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

### C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh

Consumption of fuel (excluding feedstock)	LHV (lower heating value)	0	13,705,515	13,705,515
Consumption of purchased or acquired electricity		0	1,276,867	1,276,867
Consumption of self-generated non-fuel renewable energy		8,381		8,381
Total energy consumption		8,381	14,982,383	14,990,763

## C-CH8.2a

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

	Heating value	Total MWh
Consumption of fuel (excluding feedstock)		
Consumption of purchased or acquired electricity		
Consumption of self-generated non-fuel renewable energy		0
Total energy consumption		

## C8.2b

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

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	Yes
Consumption of fuel for co-generation or tri-generation	Yes

## C8.2c

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

---

**Fuels (excluding feedstocks)**

Natural Gas

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

12,597,425

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

0

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

9,382,118

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

0

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

0

**MWh fuel consumed for self-cogeneration or self-trigeneration**

3,215,307

**Emission factor**

0.0561

**Unit**

metric tons CO<sub>2</sub>e per GJ

**Emissions factor source**

GHGE Protocol-IPCC

**Comment**

---

**Fuels (excluding feedstocks)**

Liquefied Petroleum Gas (LPG)

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

4,148

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

0

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

4,148

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

0

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

0

**MWh fuel consumed for self-cogeneration or self-trigeneration**

0

**Emission factor**

0.0631

**Unit**

metric tons CO<sub>2</sub>e per GJ

**Emissions factor source**

IPCC Guidelines

**Comment**

---

**Fuels (excluding feedstocks)**

Motor Gasoline

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

2,880

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

0

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

2,880

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

0

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

0

**MWh fuel consumed for self-cogeneration or self-trigeneration**

0

**Emission factor**

0.0693

**Unit**

metric tons CO2e per GJ

**Emissions factor source**

IPCC Guidelines

**Comment**

---

**Fuels (excluding feedstocks)**

Acetylene

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

656

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

0

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

656

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

0

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

0

**MWh fuel consumed for self-cogeneration or self-trigeneration**

0

**Emission factor**

0.074

**Unit**

metric tons CO2e per GJ

**Emissions factor source**

IPCC Guidelines

**Comment**

---

**Fuels (excluding feedstocks)**

Anthracite Coal

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

1,096,377

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

0

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

1,096,377

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

0

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

0

**MWh fuel consumed for self-cogeneration or self-trigeneration**

0

**Emission factor**

0.0983

**Unit**

metric tons CO2 per GJ

**Emissions factor source**

IPCC Guidelines

**Comment**

---

**Fuels (excluding feedstocks)**

Other, please specify  
other fuel used in process

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

4,029

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

0

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

4,029

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

0

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

0

**MWh fuel consumed for self-cogeneration or self-trigeneration**

0

**Emission factor**

**Unit**

metric tons CO2 per GJ

**Emissions factor source**

IPCC Guidelines

**Comment**

## C8.2d

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

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

## C-CH8.2d

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

	Total gross generation (MWh) inside chemicals sector boundary	Generation that is consumed (MWh) inside chemicals sector boundary
Electricity		

Heat		
Steam		
Cooling		

### C-CH8.3

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

No

## C9. Additional metrics

### C9.1

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

---

**Description**

**Metric value**

**Metric numerator**

**Metric denominator (intensity metric only)**

**% change from previous year**

**Direction of change**

**Please explain**

### C-CH9.3a

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

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

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

	Investment in low-carbon R&D	Comment
Row 1		

## 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)	No third-party verification or assurance
Scope 3	No emissions data provided

### C10.1a

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

#### Verification or assurance cycle in place

Annual process

#### Status in the current reporting year

Complete

#### Type of verification or assurance

Reasonable assurance

#### Attach the statement

 Pasabahce Bulgaria\_verification report.pdf

 Flat glass\_north italy\_verification report.pdf

#### Page/ section reference

Verification

**Relevant standard**

ISO14064-3

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

99

## C10.2

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

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

## C11. Carbon pricing

### C11.1

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

Yes

### C11.1a

**(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.**

EU ETS

### C11.1b

**(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.**

**EU ETS**

---

**% of Scope 1 emissions covered by the ETS**

10

**% of Scope 2 emissions covered by the ETS**

0

**Period start date**

January 1, 2019

**Period end date**

December 31, 2019

**Allowances allocated**

365,460

**Allowances purchased**

292,403

**Verified Scope 1 emissions in metric tons CO2e**

439,009

**Verified Scope 2 emissions in metric tons CO2e**

0

**Details of ownership**

Facilities we own and operate

**Comment**

## C11.1d

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

Şişecam's plants in Bulgaria and Italy has been participating in EU-ETS. Under the 'cap and trade' principle, a certain number of allowances (EUA) have been allocated, since 2007. Beginning from 2008, the balance of the emission-permit level has being followed continuously by Şişecam finance and environmental experts and we have been receiving consultancy services to identify most plausible trading options/risks for us and to fulfill the obligations from the Directive 2003/87/EC of The European Parliament and of The Council and the Paris Agreement.

## 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**

Information collection (understanding supplier behavior)

### **Details of engagement**

**% of suppliers by number**

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

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

### **Rationale for the coverage of your engagement**

Sustainable supply chain management is among the primary focus areas of Şişecam. In 2019, Environmental, Social and Governance (ESG) priorities in the supply chain started to be addressed in all phases of supplier management including evaluation, implementation, monitoring and development. Accordingly, the relevant processes were reviewed and supplier management systems, including ESG dimensions, were put into operation.

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

With the supplier performance system, suppliers are evaluated in the areas of dispatch performance, quality, financial, production technologies, risk and sustainability. With the Supplier Risk Assessment and Monitoring Application, the activities of the suppliers are evaluated under financial, ethical, geopolitical, strategic headings and the risk score of the suppliers is determined. In order to increase supplier cooperation, the order confirmation portal application was launched. In order to increase product and service quality by category, supplier commissioning, selection, auditing and performance evaluation processes are constantly reviewed, and action plans for improvement areas are developed and monitored depending on the audit results carried out by third party independent audit firms. With these practices, awareness of sustainability of Şişecam suppliers and their continuous development in this field are provided.

### **Comment**

## C12.1d

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

(i) Methods: Şişecam Group's engagement strategy is based on data and information sharing. Sisecam provides requested information regarding to Group's climate change strategy and energy saving activities through CDP Supply Chain Program, Questionnaires of Specific Customers, Sustainability Reports and IFC/EBRD Reports (ii) Strategy: Group is prioritizing the engagement activities based on customer demands. Measures: Şişecam commits to supply the required information, as reliable and accurate.

## 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  
Trade associations

## C12.3a

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

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Energy efficiency	Support with minor exceptions	Glass is 100% infinitely recyclable in closed loop system, each time a bottle or jar is properly collected and recycled and made into new containers, energy and raw materials are saved and less CO2 is emitted. In general terms, using 10 % recycled glass usage results in an energy saving of 2 - 3 % in the melting process and each tonne of cullet used saves CO2 emissions emitted for every tons of glass produced from carbonated virgin raw materials (soda ash, limestone and dolomite). Şişecam encourages and sponsors the "curb-side collection" of glass containers and recycle them. Şişecam has been collaborating with Ministry of Environment and Urbanism, local municipalities and recyclers for	Şişecam encourages and sponsors the "curb-side collection" of glass containers and recycle them. Şişecam has been collaborating with Ministry of Environment and Urbanism, local municipalities and recyclers for collecting and recycling glass containers. "The Glass and Glass Again" Project launched by Şişecam aims to create awareness about recycling glass packaging and ensuring high recycling rates. Şişecam supports separate collection of glass packaging and the increase of glass cullet ratio in glass container productions. Şişecam Çevre Sistemleri A.Ş. continues efforts to bolster the glass-recycling infrastructure in Turkey. In this context, the installation of glass recycling facilities of the companies that provided financial support

		collecting and recycling glass containers.	and expertise services was completed in 2019. Şişecam Çevre Sistemleri A.Ş. also launched a QR-code label application to keep inventory of glass recycling bins and track them via a system.
Cap and trade	Support with major exceptions	In accordance with decisions regarding Paris Agreement, the Republic of Turkey presented its Intended Nationally Determined Contribution (INDC) towards achieving the ultimate objective of the United Nations Framework Convention on Climate Change , whereby Turkey is committed up to 21 percent reduction in GHG emissions from the Business as Usual (BAU) level by 2030. Ministry of Environment and Urbanism is working on many strategies and action plans to combat climate change, which will have a direct impact to business sectors. Şişecam attends and takes an important role in workshops and meetings focused on adaptation to Paris Agreement. Şişecam follows up the project on Partnership for Market Readiness (PMR), governed by Ministry of Environment and Urbanism and attends workshops related to this project. The key objective of the project is to identify alternative “Market Based Instrument” to cope with climate change and to be implemented in Turkey.	Şişecam, as one of the main players of the sector, attends the workshops organized by Ministry of Environment and Urbanism and gives great support by providing feedback and recommendations about emissions, quotas and appropriate emission control systems in the sector. The aim of these workshops is to ensure multi-stakeholders engagement to provide the necessary inputs for the, improvement of Turkey’s position in the international negotiations and evaluation of Paris Agreement.

## C12.3b

**(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?**

Yes

## C12.3c

**(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.**

---

### Trade association

Istanbul Chamber of Industry

### Is your position on climate change consistent with theirs?

Consistent

### Please explain the trade association's position

The main objective of İstanbul Chamber of Industry (ICI) is to fulfil the existing and future needs of the Turkish industry through information, training and consulting services, to improve the international competitiveness of our industry and country and to contribute to the development of the country as a whole. In this respect; ICI is involved in the climate change issue as "Turkish Industry Representative" and it intends to follow global and national regulations on climate change, provide recommendations on draft regulation, train and support the Turkish Industry and contribute national strategies in the industrial perspective. ICI considers environment and energy related issues in a separate department. Commissions perform their studies with the coordination of this department.

### How have you influenced, or are you attempting to influence their position?

Şişecam has been an active member of ICI Environmental Management and Policies Commission, in order to: -define realistic targets and strategies for the industry in accordance with Turkey's special conditions on Kyoto Protocol, Paris Agreement and global competition conditions -Deliver sectoral opinions on Turkey's National Strategy and Regulations -introduce the contribution of energy efficient products, -provide sectoral opinions and data regarding regulations

---

### Trade association

Glass Alliance Europe, Glass for Europe, APFE

### Is your position on climate change consistent with theirs?

Consistent

### Please explain the trade association's position

Glass Alliance Europe's work focuses on EU environment policy, marked in recent years by the EU's Climate Change Policy. The primary mission of Glass Alliance Europe is to enhance the exchange of information between its members and to coordinate views on common environmental and regulatory challenges, which affect the glass sector. To fulfil this mission, Glass Alliance Europe issues reports, statements and press releases from the European glass industries on different topics.

**How have you influenced, or are you attempting to influence their position?**

As a member of these trade associations, Şişecam follows the EU Regulations and related applications related to climate change closely. In this way, Şişecam has the opportunity to transfer EU glass market's experience into national implementations.

**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?**

Operating in line with the principle that its energy and environmental performance is one of the core components of its sustainable success, Şişecam actively pursues the UN Sustainable Development Goals (UN SDGs) especially Goal 5-6-7-8-9-12-13-15-17 and integrates its principles into all the operations globally, taking into consideration the SDGs performance indicators. All studies are conducted with a focus on energy efficiency, renewable energy use, carbon emissions and waste recovery and are prioritized within the framework of our sustainability strategy. These targets are realized within an effective governance structure. All Group companies' operations are in line with ISO 14001 Environmental Management System and ISO 50001 Energy Management System principles, in all operational countries. In this respect, the Group monitors its energy consumption level and environmental aspects of its activities periodically and determine action plans to get the solutions for the related problems if there is any.

**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).**

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**Publication**

In other regulatory filings

**Status**

Complete

**Attach the document**

 Pasabahce Bulgaria\_verification report.pdf

 Flat glass\_north italy\_verification report.pdf

**Page/Section reference**

page 8

**Content elements**

Governance

Strategy  
Emissions figures

**Comment**

## C15. Signoff

### C-FI

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

### C15.1

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

	Job title	Corresponding job category
Row 1	Other C-Suite Officer	Other C-Suite Officer

## SC. Supply chain module

### SC0.0

**(SC0.0) If you would like to do so, please provide a separate introduction to this module.**

Türkiye Şişe ve Cam Fabrikaları A.Ş. (Şişecam Group), participates Carbon Disclosure Project-Investor Programme since 2011 and submits a consolidated response on behalf of its subsidiary companies. In this concept on behalf of subsidiary companies Şişecam Group is also invited to CDP-Supply Chain Programme by Ford, Electrolux, Coca-Cola and PepsiCo.

Therefore, in the Supply Chain Respond; Group's automotive glass plant in Turkey supply automotive glass to Ford and Electrolux. Group's glass packaging plants in Turkey supply products to Coca-Cola and PepsiCo. Group's glassware plants in Turkey and Bulgaria supply products to Coca-Cola and PepsiCo .

- Glassware: Carrying out the activities of Sisecam Group in the field of tableware, Paşabahçe Cam Sanayii ve Ticaret A.Ş. performs design, production, marketing and sale of table, kitchen articles, and souvenirs made of glass.

- Glass Packaging: Carrying out the activities of Sisecam Group in the field of glass packaging, Şişecam Glass Packaging produces designed glass packaging of different colors and sizes for

the food, beverage, alcoholic drinks, pharmaceutical and cosmetic sectors.

- Automotive Glass: Şişecam Automotive, which implements sophisticated glass projects in car, light and heavy commercial vehicle segments, participates in different projects as the co-design partner of original equipment manufacturers. As Turkey's leader and biggest automotive glass producer, the company is the supplier of automotive manufacturers .

## SC0.1

**(SC0.1) What is your company's annual revenue for the stated reporting period?**

	Annual Revenue
Row 1	12,921,388,996

## SC0.2

**(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?**

Yes

### SC0.2a

**(SC0.2a) Please use the table below to share your ISIN.**

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	TR	TRASISEW91

## SC1.1

**(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.**

### Requesting member

The Coca-Cola Company

### Scope of emissions

Scope 1

### Allocation level

Business unit (subsidiary company)

### Allocation level detail

Şişecam Group's glass packaging and glassware plants in Turkey and Bulgaria supply products to Coca-Cola.

**Emissions in metric tonnes of CO<sub>2</sub>e**

35.496

**Uncertainty (±%)**

1.5

**Major sources of emissions**

Major sources of emissions are fuel and carbonated raw materials from furnace, forming, annealing, finishing and/or secondary processing steps and auxiliary utilities that use fuel.

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG sources were identified on the base of ISO 14064-1 Standard and all of these Scope 1 sources are within the boundaries of the facilities and under the Şişecam Group's operational control. • Net calorific values: Net calorific values of the fuels used were derived from the purchasing records from fuel supplier • Emission Factors: Emission factors from 2006 IPCC guidelines were applied in the calculations • Regional Boundary: In the emission calculations, Group operations in Turkey and Bulgaria were taken into account.

---

**Requesting member**

The Coca-Cola Company

**Scope of emissions**

Scope 2

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Şişecam Group's glass packaging and glassware plants in Turkey and Bulgaria supply products to Coca-Cola.

**Emissions in metric tonnes of CO<sub>2</sub>e**

11.256

**Uncertainty (±%)**

1.5

**Major sources of emissions**

Major source is electricity usage for operations and offices.

**Verified**

No

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG sources were identified on the base of ISO 14064-1 Standard and all of these Scope 2 emission sources are within the boundaries of the facilities and under the Şişecam Group's operational control. • Emission Factors: Emission factors from 2006 IPCC guidelines were applied in the calculations • Regional Boundary: In the emission calculations, Group operations in Turkey and Bulgaria were taken into account.

---

**Requesting member**

PepsiCo, Inc.

**Scope of emissions**

Scope 1

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Şişecam Group's glass packaging and glassware plants in Turkey and Bulgaria supply products to Pepsico.

**Emissions in metric tonnes of CO<sub>2</sub>e**

9.426

**Uncertainty (±%)**

1.5

**Major sources of emissions**

Major sources of emissions are fuel and carbonated raw materials from furnace, forming, annealing, finishing and/or secondary processing steps and auxiliary utilities that use fuel.

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG sources were identified on the base of ISO 14064-1 Standard and all of these Scope 1 emission sources are within the boundaries of the facilities and under the Şişecam Group's operational control. • Net calorific values: Net calorific values of the fuels used were derived from the purchasing records from fuel supplier • Emission Factors: Emission factors from 2006 IPCC guidelines were applied in the calculations. • Regional Boundary: In the emission calculations, Group operations in Turkey and Bulgaria were taken into account.

---

**Requesting member**

PepsiCo, Inc.

**Scope of emissions**

Scope 2

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Şişecam Group's glass packaging and glassware plants in Turkey and Bulgaria supply products to Pepsico.

**Emissions in metric tonnes of CO<sub>2</sub>e**

3.079

**Uncertainty (±%)**

1.5

**Major sources of emissions**

Major source is electricity usage for operations and offices.

**Verified**

No

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG sources were identified on the base of ISO 14064-1 Standard and all of these Scope 2 emission sources are within the boundaries of the facilities and under the Şişecam Group's operational control. • Emission Factors: Emission factors from 2006 IPCC guidelines were applied in the calculations. • Regional Boundary: In the emission calculations, Group operations in Turkey and Bulgaria were taken into account.

---

**Requesting member**

Ford Motor Company

**Scope of emissions**

Scope 1

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Şişecam Group's automotive glass plant in Turkey supply automotive glass to Ford.

**Emissions in metric tonnes of CO<sub>2</sub>e**

351

**Uncertainty (±%)**

1.5

**Major sources of emissions**

Major sources of emissions are fuel used only for heating purposes.

**Verified**

No

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG sources were identified on the base of ISO 14064-1 Standard and all of these Scope 1 emission sources are within the boundaries of the facilities and under the Şişecam Group's operational control. • Net calorific values: Net calorific values of the fuels used were derived from the purchasing records from fuel supplier • Emission Factors: Emission factors from 2006 IPCC guidelines were applied in the calculations. • Regional Boundary: In the emission calculations, Group operations in Turkey were taken into account.

---

**Requesting member**

Ford Motor Company

**Scope of emissions**

Scope 2

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Şişecam Group's automotive glass plant in Turkey supply automotive glass to Ford

**Emissions in metric tonnes of CO<sub>2</sub>e**

12.168

**Uncertainty (±%)**

1.5

**Major sources of emissions**

Major source is electricity usage for operations.

**Verified**

No

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG sources were identified on the base of ISO 14064-1 Standard and all of these Scope 2 emission sources are within the boundaries of the facilities and under the Şişecam Group's operational control. • Emission Factors: Emission factors from 2006 IPCC guidelines were applied in the calculations. • Regional Boundary: In the emission calculations, Group operations in Turkey were taken into account.

---

**Requesting member**

Electrolux

**Scope of emissions**

Scope 1

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Şişecam Group's automotive glass plant in Turkey supply glass to Electrolux.

**Emissions in metric tonnes of CO<sub>2</sub>e**

172

**Uncertainty (±%)**

1.5

**Major sources of emissions**

Major sources of emissions are fuel used only for heating purposes.

**Verified**

No

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG sources were identified on the base of ISO 14064-1 Standard and all of these Scope 1 emission sources are within the boundaries of the facilities and under the Şişecam Group's operational control. • Net calorific values: Net calorific values of the fuels used were derived from the purchasing records from fuel supplier • Emission Factors: Emission factors from 2006 IPCC guidelines were applied in the calculations. • Regional Boundary: In the emission calculations, Group operations in Turkey were taken into account.

---

**Requesting member**

Electrolux

**Scope of emissions**

Scope 2

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Şişecam Group's automotive glass plant in Turkey supply automotive glass to Electrolux.

**Emissions in metric tonnes of CO<sub>2</sub>e**

6.125

**Uncertainty (±%)**

1.5

**Major sources of emissions**

Major source is electricity usage for operations.

**Verified**

No

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG sources were identified on the base of ISO 14064-1 Standard and all of these Scope 2 emission sources are within the boundaries of the facilities and under the Şişecam Group's operational control. • Emission Factors: Emission factors from 2006 IPCC guidelines were applied in the calculations. • Regional Boundary: In the emission calculations, Group operations in Turkey were taken into account.

## SC1.2

**(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).**

The amount of emission (Scope I and Scope II) generated by our operations in the reporting period, is published in annual sustainability reports and CDP Climate Change responses . The references are as follows:

Paşabahçe Cam Sanayii Ve Ticaret A.Ş. 2019 Sustainability

Report: <https://www.pasabahce.com/en/sustainability/sustainability-reports>

Anadolu Cam Sanayii A.Ş. 2019 Sustainability

Report: <https://www.sisecamcamambalaj.com/en/sustainability/sustainability-reports>

Şişecam Automotive 2019 Sustainability

Report: <https://www.sisecamduzcam.com/en/sustainability/sustainability-reports>

Şişecam 2019 CDP Response: <https://www.sisecam.com.tr/tr/surdurulebilirlik/raporlama/cdp-raporlari>

## SC1.3

**(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?**

Allocation challenges	Please explain what would help you overcome these challenges
Other, please specify Wide product range	Even in a single facility, there is a wide variety of productions and customers. Therefore, the major challenge was to allocate the collective emission activity data to different types of products and also to customers. Also, mass of products differ according to product types. Thus, we calculated allocated facility emissions (ton CO <sub>2</sub> / unit of product) according to the formula: (mass of products purchased / total mass of products produces) * total emissions Şişecam plans its production for B2B specific clients and has right infrastructure in place to track their product specific footprint (scope 1 and scope 2)

## SC1.4

**(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?**

No

## SC1.4b

### (SC1.4b) Explain why you do not plan to develop capabilities to allocate emissions to your customers.

We do not have any plan to allocate emissions to our customers in the near future yet. However we exchange views with our B2B customers for GHG reduction potentials through the product value chain.

## SC2.1

### (SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

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#### Requesting member

The Coca-Cola Company

#### Group type of project

New product or service

#### Type of project

New product or service that has a lower upstream emissions footprint

#### Emissions targeted

Actions that would reduce our own operational emissions (our scope 1 & 2)

#### Estimated timeframe for carbon reductions to be realized

1-3 years

#### Estimated lifetime CO2e savings

#### Estimated payback

#### Details of proposal

With the climate-related projects managed by Şişecam, carbon emissions are expected to be reduced, greater amount of product is expected to be produced with less raw material. Advantages are expected to be gained in product transportation such as ease carrying and less emissions during transportation. Mentioned projects are as follows: 1. Şişecam encourages and sponsors the "curb-side collection" of glass containers. Şişecam has been collaborating with Ministry of Environment and Urbanism, local municipalities and recyclers for collecting and recycling of container glass. With this sense, Şişecam manages "The Glass and Glass Again" Project as one of Turkey's most comprehensive sustainability projects. This project is conducted in line with three main targets: • Raising awareness and informing

society about the recycling of glass packaging • Developing infrastructure for the collection of glass packaging waste • modernizing plants where glass packaging waste is collected and processed and separating glass packaging waste mixed in with domestic waste prior to regular storage. Şişecam also collaborated with district municipalities to raise social awareness on the issue, improve the infrastructure for collection, and streamline facilities for glass recycling. During the events, carried out under the Glass and Glass Again project, aiming to raise awareness by conveying the contribution of recycling to the environment for a sustainable future with various communication activities. 2. Şişecam manages light-weight glass packaging production project. With this project, savings are secured in raw materials, energy and water while nothing is lost from the volume, durability and visual quality of the product.

## SC2.2

**(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?**

No

## SC3.1

**(SC3.1) Do you want to enroll in the 2020-2021 CDP Action Exchange initiative?**

No

## SC3.2

**(SC3.2) Is your company a participating supplier in CDP's 2019-2020 Action Exchange initiative?**

No

## SC4.1

**(SC4.1) Are you providing product level data for your organization's goods or services?**

Yes, I will provide data

## SC4.1a

**(SC4.1a) Give the overall percentage of total emissions, for all Scopes, that are covered by these products.**

5.78

## SC4.2a

**(SC4.2a) Complete the following table for the goods/services for which you want to provide data.**

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**Name of good/ service**

Glass packaging

**Description of good/ service**

Coca cola bottle

**Type of product**

Intermediate

**SKU (Stock Keeping Unit)**

61.888 ton

**Total emissions in kg CO2e per unit**

0.67

**±% change from previous figure supplied**

-2.4

**Date of previous figure supplied**

July 31, 2019

**Explanation of change**

Total emission is 0,67 kg CO2/kg glass product. Glass bottles are manufactured in different plants, thus average value of emission (kg CO2/kg glass product) is provided. With the help of increase in glass cullet usage rate, weight reduction projects and energy efficiency projects, total emission per unit decreased in comparison to 2018.

**Methods used to estimate lifecycle emissions**

ISO 14040 & 14044

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**Name of good/ service**

Tableware

**Description of good/ service**

Coca cola glass

**Type of product**

Final

**SKU (Stock Keeping Unit)**

5.457

**Total emissions in kg CO2e per unit**

1.47

**±% change from previous figure supplied**

9

**Date of previous figure supplied**

July 31, 2019

**Explanation of change**

9% increase in CO2 emission per unit in comparison to 2018 data.

**Methods used to estimate lifecycle emissions**

ISO 14040 & 14044

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**Name of good/ service**

Autoglass

**Description of good/ service**

Autoglass for Ford Motor Company

**Type of product**

Intermediate

**SKU (Stock Keeping Unit)**

1.399.697 m2

**Total emissions in kg CO2e per unit**

9.2

**±% change from previous figure supplied**

-3

**Date of previous figure supplied**

July 31, 2019

**Explanation of change**

3% decrease in CO2 emission per unit in comparison to previous year data is achieved, due to energy efficiency projects managed by

Şişecam.

**Methods used to estimate lifecycle emissions**

ISO 14040 & 14044

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**Name of good/ service**

Glass packaging

**Description of good/ service**

Pepsico bottle

**Type of product**

Intermediate

**SKU (Stock Keeping Unit)**

18.649 ton

**Total emissions in kg CO<sub>2</sub>e per unit**

0.68

**±% change from previous figure supplied**

0

**Date of previous figure supplied**

July 31, 2019

**Explanation of change**

There is no change in CO<sub>2</sub> emission per unit, compared to previous year.

**Methods used to estimate lifecycle emissions**

ISO 14040 & 14044

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**Name of good/ service**

Tableware

**Description of good/ service**

Pepsico glass

**Type of product**

Final

**SKU (Stock Keeping Unit)**

762 ton

**Total emissions in kg CO2e per unit**

1.24

**±% change from previous figure supplied**

9

**Date of previous figure supplied**

July 31, 2019

**Explanation of change**

9% increase in CO2 emission per unit in comparison to 2018 data is achieved, this is an average value since, this product is manufactured in different glass packaging plants.

**Methods used to estimate lifecycle emissions**

ISO 14040 & 14044

**Name of good/ service**

Autoglass

**Description of good/ service**

Autoglass for Electrolux

**Type of product**

Intermediate

**SKU (Stock Keeping Unit)**

684.785 m2

**Total emissions in kg CO2e per unit**

9.2

**±% change from previous figure supplied**

**Date of previous figure supplied**

**Explanation of change**

**Methods used to estimate lifecycle emissions**

ISO 14040 & 14044

## SC4.2b

**(SC4.2b) Complete the following table with data for lifecycle stages of your goods and/or services.**

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**Name of good/ service**

Glass packaging - Coca Cola bottle

**Please select the scope**

Scope 1 & 2

**Please select the lifecycle stage**

Production

**Emissions at the lifecycle stage in kg CO2e per unit**

0.67

**Is this stage under your ownership or control?**

Yes

**Type of data used**

Primary

**Data quality**

Data is directly related to fuel, carbonated raw material and electricity consumption used in production. The data provided is very reliable.

**If you are verifying/assuring this product emission data, please tell us how**

Scope 1 emission data of the plant is verified by third party authorized from Ministry of Environment and Urbanism.

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**Name of good/ service**

Tableware - Coca Cola glass

**Please select the scope**

Scope 1 & 2

**Please select the lifecycle stage**

Production

**Emissions at the lifecycle stage in kg CO2e per unit**

1.47

**Is this stage under your ownership or control?**

Yes

**Type of data used**

Primary

**Data quality**

Data is directly related to fuel, carbonated raw material and electricity consumption used in production. The data provided is very reliable.

**If you are verifying/assuring this product emission data, please tell us how**

Scope 1 emission data of the plant is verified by third party authorized from Ministry of Environment and Urbanism.

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**Name of good/ service**

Autoglass - Autoglass for Ford Motor Company

**Please select the scope**

Scope 1 & 2

**Please select the lifecycle stage**

Production

**Emissions at the lifecycle stage in kg CO2e per unit**

8.9

**Is this stage under your ownership or control?**

Yes

**Type of data used**

Primary

**Data quality**

Data is directly related to fuel and electricity consumption used in production.

**If you are verifying/assuring this product emission data, please tell us how**

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**Name of good/ service**

Glass packaging - Pepsico Bottle

**Please select the scope**

Scope 1 & 2

**Please select the lifecycle stage**

Production

**Emissions at the lifecycle stage in kg CO2e per unit**

0.7

**Is this stage under your ownership or control?**

Yes

**Type of data used**

Primary

**Data quality**

Data is directly related to fuel, carbonated raw material and electricity consumption used in production. The data provided is very reliable.

**If you are verifying/assuring this product emission data, please tell us how**

Scope 1 emission data of the plant is verified by third party authorized from Ministry of Environment and Urbanism.

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**Name of good/ service**

Tableware - Pepsico Glass

**Please select the scope**

Scope 1 & 2

**Please select the lifecycle stage**

Production

**Emissions at the lifecycle stage in kg CO2e per unit**

1.24

**Is this stage under your ownership or control?**

Yes

**Type of data used**

Primary

**Data quality**

Data is directly related to fuel, carbonated raw material and electricity consumption used in production. The data provided is very reliable.

**If you are verifying/assuring this product emission data, please tell us how**

Scope 1 emission data of the plant is verified by third party authorized from Ministry of Environment and Urbanism.

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**Name of good/ service**

Autoglass - Autoglass for Electrolux

**Please select the scope**

Scope 1 & 2

**Please select the lifecycle stage**

Production

**Emissions at the lifecycle stage in kg CO2e per unit**

9.2

**Is this stage under your ownership or control?**

Yes

**Type of data used**

Primary

**Data quality**

Data is directly related to electricity consumption used in production. The data provided is very reliable.

**If you are verifying/assuring this product emission data, please tell us how**

## SC4.2c

**(SC4.2c) Please detail emissions reduction initiatives completed or planned for this product.**

Name of good/ service	Initiative ID	Description of initiative	Completed or planned	Emission reductions in kg CO2e per unit
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## SC4.2d

**(SC4.2d) Have any of the initiatives described in SC4.2c been driven by requesting CDP Supply Chain members?**

No

## Submit your response

**In which language are you submitting your response?**

English

**Please confirm how your response should be handled by CDP**

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Investors Customers	Public	Yes, submit Supply Chain Questions now

**Please confirm below**

I have read and accept the applicable Terms