

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.

Glass Fibre: Cam Elyaf San. A.Ş. is a corporation of Şişecam Chemicals Group, and produces reinforcing materials from "E" glass fiber for reinforced plastic (GRP) industry. Except glass manufacturing, which is the main field of the Group, chemical production (soda and chromium compounds) industrial raw materials, electricity, Vitamin K3 derivatives, sodium metabisulphite are the other activities of Şişecam.

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
Row 1	January 1 2017	December 31 2017	No	<Not Applicable>
Row 2	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 3	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 4	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

C0.3

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

Bulgaria

Turkey

C0.4

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

TRY

C0.5

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

Financial control

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) 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.
Please select	

C1.1b

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	<ul style="list-style-type: none"> Reviewing and guiding strategy Reviewing and guiding risk management policies Reviewing and guiding business plans Monitoring and overseeing progress against goals and targets for addressing climate-related issues 	<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.</p>

C1.2

(C1.2) Below board-level, provide the highest-level management 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	As important matters arise
Other C-Suite Officer, please specify	Managing climate-related risks and opportunities	As important matters arise

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.

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, and coordinating, directing and supervising the activities of sub-working groups within the Sustainability Committee. The working groups within the committee (Working Group on the Environment, Production Technologies and Energy , Occupational Health and Safety, Innovation Management, 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, branding, 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 education programs, measurement of sustainability efficiency, energy and natural resources management, etc.

C1.3

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

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues.

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Monetary reward

Activity incentivized

Efficiency project

Comment

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

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

C2.2

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

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

C2.2a

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

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	Risk management function, which has been conducted centrally for many years, is integrated to "MicroSCOpe" software system. This system provides systematic information collection and reporting. MicroSCOpe has been developed to expand risk footprint and risk management activities, improving risk culture within the Sisecam Group.

C2.2b

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

Operating in energy intensive sector, Şişecam Group operations are highly sensitive to all kinds of energy and environment related policies. For this reason, all risk and opportunity identification are assessed for both company and asset level as Şişecam Group. In addition, risks and opportunities are assessed according to certification systems (such as ISO 14001&50001) in each plant.

Sustainability Directorate evaluate risks and opportunities in much more detailed way. In this respect, risk and opportunities affecting environment and quality related issues are considered for both new investments and existing plants. Identification and evaluation of risks and opportunities are applied by taking into account regulations, physical change, climate change, changes in market, strategic documents driven by legislations and international agreements.

In order to identify and assess climate-related risks communication and coordination activities are emphasized and technological facilities are used in the Group in order to manage risks which are identified, prioritized and monitored by action plans on the basis of risk appetite and in scope of enterprise risk management. The Group also used the reporting activities to ensure healthy monitoring of the process conducted in accordance with the legislation.

C2.2c

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Turkey'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.
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.
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.
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 which is published in November 2017 by the Turkish Ministry of Energy and Natural Resources.
Market	Relevant, always included	In order to protect market share, Şişecam follows up the technology and invest in research and development.
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 development of climate friendly products and introduces online applications to the partners to ensure optimum selection of climate friendly products.
Acute physical	Relevant, sometimes included	Increase of GHG concentrations in the atmosphere leads to impacts on climate change and global warming. 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 floods can damage the plants and production. Extreme rain and storms can hinder the supply of raw materials, production and transportation of products.
Chronic physical	Not evaluated	Longer-term shifts in climate patterns is unlikely to predict, due to this reason chronic physical conditions are not evaluated.
Upstream	Relevant, sometimes included	Shifts in upstream conditions are relevant to risk consideration. For instance, as the number of players are increasing in the sector, Şişecam searches for new international markets.
Downstream	Relevant, always included	Shifts in downstream conditions are relevant to risk consideration. However, at Şişecam the raw materials required for glass manufacturing are manufactured in another Şişecam Chemicals Plants.

C2.2d

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

Risk management function, which has been conducted centrally for many years is integrated to "MicroSCOpe" software system. This system provides systematic information collection and reporting. Criteria for determining materiality/priorities includes current or possible regulatory requirements, energy efficiency and security, global and regional regulations, financial factors and public awareness. Şişecam Sustainability Directorate follows and evaluates the current and possible regulatory (climate change related) requirements and inform the related departments such as Production Units, Risk Management, Finance and Investor Relations Management about risks and opportunities on a regular basis. Moreover, risks are being assessed and applied according to environmental management and energy management certification systems (such as ISO 14001&50001) in each plant.

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 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Enhanced emissions-reporting obligations

Type of financial impact driver

Policy and legal: Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

In accordance with decisions 1/CP.19 and 1/CP.20, 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 which is set out in its Article 2 and clarifying information. 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. However, it is still not clarified how the target will be distributed to different sectors. This may bring extra responsibilities for Şişecam.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Potential financial impact

Explanation of financial impact

The adaptation to Paris Agreement will result in substantial future capital costs, and regulated carbon quotas. If the sectors exceed their quotas related to targets, they should purchase carbon credits which will directly result in increase of operational expenses.

Management method

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. Regulatory assessment reports on climate change is prepared annually by Sustainability Directorate and shared with all members of Şişecam Group for their references and use while conducting their procurement and investment planning. Moreover as of 2017 Şişecam became a member of Global Compact. Within the framework of Global Compact active participation is ensured to gain an international perspective and knowledge on 10 Principles including environment and climate change.

Cost of management

65000

Comment

Membership fees for Glass Alliance Europe and Global Compact

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Increased pricing of GHG emissions

Type of financial impact driver

Policy and legal: Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

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.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Potential financial impact

Explanation of financial impact

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 (as an EU country) increase of carbon price and exclusion of glass sector from carbon leakage list may result in extra costs .

Management method

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. Moreover, for Şişecam operations in Bulgaria, Şişecam follows up the upcoming EU regulations related climate change.

Cost of management

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 the, improvement of Turkey's position in the international negotiations.

C2.4

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

Yes

C2.4a

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

Identifier

Opp1

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact driver

Increased revenue through demand for lower emissions 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.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Potential financial impact**Explanation of financial impact**

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, tenteseol titanium, solar control and thermal insulation glass is expected.

Strategy to realize opportunity

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.

Cost to realize opportunity**Comment**

Identifier

Opp2

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Type of financial impact driver

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

Company- specific description

Voluntary regulation on 'Certification of sustainable sites with sustainable green buildings' is published by Ministry of Environment and Urbanism. The regulation aims to set the principles and procedures related to evaluate and certify green buildings and 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

Potential financial impact

Explanation of financial impact

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.

Strategy to realize opportunity

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.

Cost to realize opportunity

Comment

C2.5

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

	Impact	Description
Products and services	Impacted	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. This will result in medium impact for products and services.
Supply chain and/or value chain	Impacted	In accordance with decisions 1/CP.19 and 1/CP.20, 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 which is set out in its Article 2 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 our supply chain, mainly energy supply. This may result in increase of energy costs, that will have a high impact on business.
Adaptation and mitigation activities	Impacted	In accordance with decisions 1/CP.19 and 1/CP.20, the Republic of Turkey presented its Nationally Determined Contribution (NDC) towards achieving the ultimate objective of the United Nations Framework Convention on Climate Change which is set out in its Article 2 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. This may result in high impact for adaptation and mitigation activities.
Investment in R&D	Impacted for some suppliers, facilities, or product lines	Regulation on 'Certification of sustainable sites with sustainable green buildings' is published by Ministry of Environment and Urbanism. The regulation aims to set the principles and procedures related to evaluate and certify green buildings and green sites. This creates an opportunity for Şişecam's energy efficient products. Investment in research and development for energy efficient products became a major issue. This may result in medium impact for Research and Development investments
Operations	Impacted for some suppliers, facilities, or product lines	Reduction in greenhouse gas emissions and thus reduction in energy consumption became a major issue in operations. This may result in high impact for operations.
Other, please specify	Impacted	Şişecam customers are impacted. Regulation on 'Certification of sustainable sites with sustainable green buildings' is published by Ministry of Environment and Urbanism. The regulation aims to set the principles and procedures related to evaluate and certify green buildings and green sites. This creates an opportunity for Şişecam's energy efficient products.

C2.6

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

	Relevance	Description
Revenues	Impacted	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. Potential alternatives to govern the carbon mechanisms nationwide (for example carbon taxes, carbon-trading systems etc.) may be implemented. This may result in extra operation costs for Şişecam. In accordance with decisions 1/CP.19 and 1/CP.20, 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 which is set out in its Article 2 and clarifying information. 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. However, it is still not clarified how the target will be distributed to different sectors. This may bring extra responsibilities for Şişecam.
Operating costs	Impacted	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. Potential alternatives to govern the carbon mechanisms nationwide (for example carbon taxes, carbon-trading systems etc.) may be implemented. This may result in extra operation costs for Şişecam. In accordance with decisions 1/CP.19 and 1/CP.20, 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 which is set out in its Article 2 and clarifying information. 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. However, it is still not clarified how the target will be distributed to different sectors. This may bring extra responsibilities for Şişecam.
Capital expenditures / capital allocation	Impacted for some suppliers, facilities, or product lines	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. Potential alternatives to govern the carbon mechanisms nationwide (for example carbon taxes, carbon-trading systems etc.) may be implemented. This may result in extra operation costs for Şişecam.
Acquisitions and divestments	Not yet impacted	
Access to capital	Not yet impacted	
Assets	Not yet impacted	
Liabilities	Not impacted	
Other	Please select	

C3. Business Strategy

C3.1

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

Yes

C3.1a

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

Yes, qualitative

C3.1c

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

1) How the business strategy has been influenced: 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 5-6-7-8-9-10-12-13-15-17 and integrates the related 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. As an energy intensive production group, Şişecam responds to climate change issues by continuously improving and minimizing energy consumption and implementation of renewable energy solutions as part of its corporate strategy. Reduction in carbon emissions in consequence of reduction in energy consumption will continue to dominate the agenda of Şişecam in the near future, inspiring new project developments. In addition to the routine procedure, with the energy and carbon management approach, short, mid and long-term energy & climate related measures, climate change risks and opportunities are continued to be integrated into Group activities.

2) Examples for influence on business strategy - Integration of carbon and energy management facts into corporate strategy - Monitoring and verification of Greenhouse Gas Emissions - Implementation of the online energy management software for the monitoring of energy performance of production plants in the Group - Waste heat recovery installations that converts the released thermal energy to electrical energy - Preliminary and comprehensive energy audits by a certified consultant for all Şişecam companies - Usage of energy efficient equipment (electric motors, pumps, fans and other production and auxiliary equipment) - Adaptation of ISO 14001 Environmental Management System and ISO 50001 Energy Management System to all Şişecam Companies - Integration of Environmental and Energy Policy centrally - Sustainability reports for the operations in Turkey of Şişecam Group, Şişecam Flat Glass, Şişecam Glass Packaging, Paşabahçe and Soda Sanayii A.Ş. -Şişecam Sustainability Committee working on prioritizing and realizing sustainability related issues - Partnership and membership to Global Compact - Environmental Data Management Software for the operations in Turkey - Sustainability Workshop for interns - Trainings focused on gender and climate change - Articles on climate change in Şişecam Magazine - News on climate change on digital screens

3) What aspects of climate change have influenced the strategy: Şişecam’s climate change approach is based on corporate-national-global energy demand, energy security issues and related energy and climate change regulations. Strategy is based on tangible energy consumption and carbon reduction level.

4) The most important components of the short term strategy that have been influenced by climate change: Short-term measures into business strategy: (1-5 years) Energy efficiency projects or investments that have relatively short payback period are defined as high priority projects.

5) The most important components of the long- term strategy that have been influenced by climate change: Long term measures into business strategy: (+10 years) Production of high value added, energy and environmental friendly products and optimum usage of renewable energy are in the scope of the Şişecam Group’s common production strategy.

6) How this is gaining the company strategic advantage over competitors: Strategic advantage and substantial business decision: An increase is expected in demand for Şişecam's existing climate and energy friendly products such as low-e and solar control glass. As a result; a significant market growth is expected. Şişecam's R&D activities are focused on developing new energy efficient and environmental friendly high value added products.

C3.1d

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

Climate-related scenarios	Details
Nationally determined contributions (NDCs)	In accordance with decisions 1/CP.19 and 1/CP.20, 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 which is set out in its Article 2 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. 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) Project governed by Ministry of Environment and Urbanism and attends workshops related to this project. Moreover 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.

C4. Targets and performance

C4.1

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

Intensity target

C4.1b

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

Target reference number

Int 1

Scope

Scope 1+2 (location-based)

% emissions in Scope

56

% reduction from baseline year

5

Metric

Metric tons CO2e per metric ton of product

Base year

2017

Start year

2018

Normalized baseline year emissions covered by target (metric tons CO2e)

0.67

Target year

2022

Is this a science-based target?

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

% achieved (emissions)

0

Target status

New

Please explain

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

% change anticipated in absolute Scope 1+2 emissions

5

% change anticipated in absolute Scope 3 emissions

0

C4.2

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

Target

Energy productivity

KPI – Metric numerator

Energy consumption

KPI – Metric denominator (intensity targets only)

Gross melted glass production

Base year

2017

Start year

2018

Target year

2022

KPI in baseline year

8

KPI in target year

7.8

% achieved in reporting year

0

Target Status

New

Please explain

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

Part of emissions target

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Target

Renewable energy consumption

KPI – Metric numerator

Renewable energy consumption

KPI – Metric denominator (intensity targets only)

Base year

2017

Start year

2018

Target year

2022

KPI in baseline year

6

KPI in target year

12

% achieved in reporting year

0

Target Status

New

Please explain

Target is to get 12 MW energy provided through renewable energy sources by 2022

Part of emissions target

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

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 projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation		
To be implemented*		
Implementation commenced*		
Implemented*	19	9677
Not to be implemented		

C4.3b

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

Activity type

Low-carbon energy installation

Description of activity

Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)

134

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

362160

Investment required (unit currency – as specified in CC0.4)

Payback period

4 - 10 years

Estimated lifetime of the initiative

16-20 years

Comment

Commission of solar panel system in Trakya Cam Mersin Plant.

Activity type

Energy efficiency: Processes

Description of activity

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

1361

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

791413

Investment required (unit currency – as specified in CC0.4)**Payback period**

1-3 years

Estimated lifetime of the initiative

3-5 years

Comment

Efficiency projects in Automotive Group: Renewal of lighting fixtures in Trakya Otomotiv Plant - Renewal of cooling fan barrel in Trakya Otomotiv Plant - Change of electric motors with high efficiency motors in Trakya Otomotiv Plant

Activity type

Energy efficiency: Processes

Description of activity

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

2.36

Scope

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

962230

Investment required (unit currency – as specified in CC0.4)**Payback period**

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

Efficiency projects of Glass Packaging Group: Change of electric motors with high efficiency motors in Anadolu Cam Eskişehir Plant - Efficiency projects with fan, pump and converter in Anadolu Cam Eskişehir Plant - Efficiency projects with pressurized air in Anadolu Cam Eskişehir Plant - Efficiency projects in furnaces, waste heat recovery system, improvements in burning conditions in Anadolu Cam Eskişehir Plant - Change of electric motors with high efficiency motors in Anadolu Cam Yenişehir Plant - Change of lighting fixtures in Anadolu Cam Yenişehir Plant - Change of electric motors with high efficiency motors in Anadolu Cam Mersin Plant - Change of lighting fixtures in Anadolu Cam Mersin Plant - Efficiency projects with pressurized air in Anadolu Cam Mersin Plant -

Activity type

Energy efficiency: Processes

Description of activity

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

4744

Scope

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

3143750

Investment required (unit currency – as specified in CC0.4)**Payback period**

1-3 years

Estimated lifetime of the initiative

3-5 years

Comment

Efficiency projects in Tableware Group: Reduction in consumption of gases used for carbon plating of moulds in Paşabahçe Eskişehir and Kırklareli Plants - Improvements in isolation of furnace and burning efficiency in Denizli Cam Plant - Improvements in industrial water cooling systems in Paşabahçe Kırklareli Plant - Improvements in isolation of furnace and burning efficiency in Denizli Cam Plant

Activity type

Energy efficiency: Processes

Description of activity

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

1073

Scope

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

1348945

Investment required (unit currency – as specified in CC0.4)**Payback period**

4 - 10 years

Estimated lifetime of the initiative

6-10 years

Comment

Efficiency projects of Chemicals Group: CO2 optimisation in pH neutralisation column in Soda Factory - Usage of frequency converter in furnace air fans in Soda Factory - Heating of natural gas in Soda Factory - Renewal of product drier in Oxyvit Factory

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, water, 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 1/CP.19 and 1/CP.20, the Republic of Turkey presented its Nationally Determined Contribution (NDC) towards achieving the ultimate objective of the United Nations Framework Convention on Climate Change which is set out in its Article 2 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 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 preparations and provided the necessary technical inputs.

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 2017

Base year end

December 31 2017

Base year emissions (metric tons CO2e)

4236195

Comment

Scope 2 (location-based)

Base year start

January 1 2017

Base year end

December 31 2017

Base year emissions (metric tons CO2e)

521717

Comment

Scope 2 (market-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.2

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

ISO 14064-1

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Row 1

Gross global Scope 1 emissions (metric tons CO2e)

4236195

End-year of reporting period

<Not Applicable>

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?

Row 1

Scope 2, location-based

521717

Scope 2, market-based (if applicable)

<Not Applicable>

End-year of reporting period

<Not Applicable>

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?

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

Headquarter buildings

Relevance of Scope 1 emissions from this source

Emissions are relevant and calculated, but not disclosed

Relevance of location-based Scope 2 emissions from this source

Emissions are relevant and calculated, but not disclosed

Relevance of market-based Scope 2 emissions from this source (if applicable)

No emissions from this source

Explain why the source is excluded

Emissions from operational buildings are calculated however they are relatively small when compared to the emissions of the plants.

C6.5

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

Purchased goods and services

Evaluation status

Relevant, not yet calculated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Capital goods

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

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

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

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

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Waste generated in operations

Evaluation status

Not evaluated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Business travel

Evaluation status

Relevant, not yet calculated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Employee commuting

Evaluation status

Relevant, not yet calculated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Upstream leased assets

Evaluation status

Relevant, not yet calculated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Downstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

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

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

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

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

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

Franchises

Evaluation status

Not evaluated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

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

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Other (downstream)

Evaluation status

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

C6.7

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

No

C6.10

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

Intensity figure

0.00059

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

4757911

Metric denominator

unit total revenue

Metric denominator: Unit total

8037000000

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 increase in total revenue compared to 2016 and emission reduction activities performed in 2017.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?

No

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO ₂ e)
Turkey	3888174
Bulgaria	348021

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 CO ₂ e)
Glass production	2203213
Other	2032981

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO ₂ e)	Scope 2, market-based (metric tons CO ₂ e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Turkey	486495	0	1055800	0
Bulgaria	53222	0	114851	0

C7.6

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

By business division

C7.6a

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

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Glass production	477600	0
Other	44117	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		<Not Applicable>		
Other emissions reduction activities	9677	Decreased	0.2	Due to other emissions reduction activities 9677 ton CO2 is reduced. In 2016 total emissions was 4491048. Emissions reduction activities resulted in %0,2 reduction in CO2 emissions. $(9677/4491048*100)$
Divestment		<Not Applicable>		
Acquisitions		<Not Applicable>		
Mergers		<Not Applicable>		
Change in output	202097	Increased	4.5	Due to increase in output there was an increase of 202.097 ton CO2. In 2016 total emissions was 4491048. Increase in output resulted in %4,5 increase in CO2 emissions . $(202097/4491048*100)$
Change in methodology	71857	Increased	1.6	Due to change in methodology there was an increase of 71.857 ton CO2. In 2016 total emissions was 4491048. Methodology change resulted in %1,6 increase in CO2 emissions . $(71857/4491048*100)$
Change in boundary		<Not Applicable>		
Change in physical operating conditions		<Not Applicable>		
Unidentified		<Not Applicable>		
Other		<Not Applicable>		

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

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

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	0	15806874	15806874
Consumption of purchased or acquired electricity	<Not Applicable>	0	1170651	1170651
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	0	16977525	16977525

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 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

12420353

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

8539062

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

3881291

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

4936

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

4936

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

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

9070

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

9070

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

Fuels (excluding feedstocks)

Acetylene

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

982

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

982

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

Fuels (excluding feedstocks)

Anthracite Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

3362580

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

3362580

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

Fuels (excluding feedstocks)

Other, please specify (other fuel used in process)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

8954

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

8954

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

C8.2d

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

Acetylene

Emission factor

0.074

Unit

metric tons CO2e per GJ

Emission factor source

IPCC Guidelines

Comment

Anthracite Coal

Emission factor

0.0983

Unit

metric tons CO2 per GJ

Emission factor source

IPCC Guidelines

Comment

Liquefied Petroleum Gas (LPG)

Emission factor

0.0631

Unit

metric tons CO2 per GJ

Emission factor source

IPCC Guidelines

Comment

Motor Gasoline

Emission factor

0.0741

Unit

metric tons CO2 per GJ

Emission factor source

IPCC Guidelines

Comment

Natural Gas

Emission factor

0.0561

Unit

metric tons CO2 per GJ

Emission factor source

IPCC Guidelines

Comment

Other

Emission factor

Unit

Please select

Emission factor source

Comment

C8.2e

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	1296373	61825	0	0
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C8.2f

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

C9. Additional metrics

C9.1

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

Description

Please select

Metric value

Metric numerator

Metric denominator (intensity metric only)

% change from previous year

Direction of change

<Not Applicable>

Please explain

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

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

Bulgaria_CO2 verification report.pdf

Page/ section reference

page 9-10

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, we do not verify any other climate-related information reported in our CDP disclosure

C11. Carbon pricing

C11.1

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

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 systems in which you participate.

EU ETS

% of Scope 1 emissions covered by the ETS

8

Period start date

January 1 2017

Period end date

December 31 2017

Allowances allocated

290380

Allowances purchased

290380

Verified emissions in metric tons CO₂e

347695

Details of ownership

Facilities we own and operate

Comment

Şişecam's operations in Bulgaria has been participating in EU-ETS. Under the 'cap and trade' principle, a certain number of allowances (EUA) have been allocated, since 2007.

C11.1d

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

Şişecam's operations in Bulgaria 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 kept in touch with consultant agencies to evaluate the most suitable 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 Kyoto Protocol. For the new period; financial evaluations for trading options will be continued in collaboration with carbon trade agencies.

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

Please select

Details of engagement

<Not Applicable>

% of suppliers by number

% total procurement spend (direct and indirect)

% Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement

Impact of engagement, including measures of success

Comment

C12.1c

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

(i) Methods: Şişecam Group's engagement strategy is based on data and information sharing. Siseecam provides requested information regarding to Group's climate change strategy and energy saving activities through CDP Supply Chain Program, Questionnaires of Spesific 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. Şiseecam has been collaborating with Ministry of Environment and Urbanism, local municipalities and recyclers for collecting and recycling glass containers.	Şişecam encourages and sponsors the "curb-side collection" of glass containers and recycle them. Şiseecam 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.
Cap and trade	Support with major exceptions	In accordance with decisions 1/CP.19 and 1/CP.20, 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 which is set out in its Article 2 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 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 Istanbul 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, 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, or are you attempting to, influence the 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

Trade association

Glass Alliance Europe, FEVE, 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, or are you attempting to, influence the 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. Also, President of Şişecam Flat Glass is Chairman of Glass for Europe.

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 monitor 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).

Publication

In other regulatory filings

Status

Complete

Attach the document

Bulgaria_CO2 verification report.pdf

Content elements

Emissions figures

Publication

In voluntary sustainability report

Status

Complete

Attach the document

Sisecam_SR2017_ENG_3107.pdf

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

Publication

In other regulatory filings

Status

Complete

Attach the document

Sisecamannual report_2017.pdf

Content elements

Governance
Strategy

C14. Signoff

C-FI

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

C14.1

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

	Job title	Corresponding job category
Row 1	Environmental Management Manager	Environment/Sustainability manager

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 Motor Company, The Coca-Cola Company and PepsiCo.

Therefore, in the Supply Chain Respond; Group's automotive glass plant in Turkey and Bulgaria supply automotive glass to Ford Motor Company. 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	8037000000

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

Emissions in metric tonnes of CO₂e

37.154

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

Emissions in metric tonnes of CO₂e

11.019

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

Emissions in metric tonnes of CO₂e

396

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 and Bulgaria were taken into account.

Requesting member

PepsiCo, Inc.

Scope of emissions

Scope 1

Emissions in metric tonnes of CO₂e

9.062

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 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

Emissions in metric tonnes of CO₂e

2.852

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 2

Emissions in metric tonnes of CO2e

16.351

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 and Bulgaria 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) generated by our operations in the reporting period, is published in annual sustainability reports and CDP Climate Change responses where Scope II emissions are published only in CDP Climate Change response. The references are as follows:

Paşabahçe Cam Sanayii Ve Ticaret A.Ş. 2017 Sustainability Report: <http://www.pasabahce.com/tr/surdurulebilirlik/surdurulebilirlik-raporlari>

Anadolu Cam Sanayii A.Ş. 2017 Sustainability Report: <http://www.sisecamcamambalaj.com/tr/surdurulebilirlik/surdurulebilirlik-raporlari>

Şişecam Otomotive 2017 Sustainability Report: <http://www.sisecamduzcam.com/tr/surdurulebilirlik/surdurulebilirlik-raporlari>

Şişecam 2017 CDP Response: <http://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 CO2 / unit of product) according to the formula: (mass of products purchased / total mass of products produces) * total emissions

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.

SC2.1

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

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

Other, please specify (Actions to reduce Scope 1 emissions)

Estimated timeframe for carbon reductions to be realized

1-3 years

Estimated lifetime CO2e savings

Estimated payback

Please select

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 and social responsibility 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. In 2017 under the project, 2,914 glass recycling bins were offered to the municipalities and 20 thousand students were trained on glass recycling. During the 2011-2017 period, 254 thousand primary school students have received training in recycling under the "Glass and Glass Again" project. In addition, a total of 19,800 glass bottle bins have been offered to the municipalities and 912 thousand tons of glass packaging waste has been recycled. The resulting reduction in carbon emissions is equivalent to taking 328,400 cars off the roads while the amount of energy saved was enough to meet the heating and hot water needs of 38,300 households. Şişecam also collaborated with 163 district municipalities in 24 provinces 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, 35 thousand people were reached out to during the year. 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. Through the glass packaging products' weight reduction efforts, which began in 2010 and which are still in progress, Şişecam Glass Packaging reduced the weight of approximately 7% of its total products. This resulted in decrease of 6,000 tons carbon emissions and 8,000 tons glass use.

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 2018-2019 CDP Action Exchange initiative?

No

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2017-2018 Action Exchange initiative?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services, if so, what functionality will you be using?

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.

6

SC4.2a

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

Name of good/ service

Glass packaging

Description of good/ service

Coca cola bottle

Type of product

Intermediate

SKU (Stock Keeping Unit)

56.873 ton

Total emissions in kg CO2e per unit

0.71

±% change from previous figure supplied

5

Date of previous figure supplied

June 30 2017

Explanation of change

Total emission is 0,71 kg CO2/kg glass product. Glass bottles are manufactured in different plants, thus average value of emission (kg CO2/kg glass product) is provided. As emission calculation methodology is changed in 2017 due to verification, total emission per unit seems to be increased in comparison to 2016, although energy efficiency projects, increasing glass cullet usage rate and weight reduction projects are performed also .

Methods used to estimate lifecycle emissions

ISO 14040 & 14044

Name of good/ service

Tableware

Description of good/ service

Coca cola glass

Type of product

Final

SKU (Stock Keeping Unit)

5.633 ton

Total emissions in kg CO2e per unit

1.43

±% change from previous figure supplied

-1

Date of previous figure supplied

June 30 2017

Explanation of change

1% decrease in CO2 emission per unit in comparison to 2016 data is achieved, due to energy efficiency projects managed by Şişecam. 1.43 kg CO2e per kg glass is an average value since, this product is manufactured in different tableware plants.

Methods used to estimate lifecycle emissions

ISO 14040 & 14044

Name of good/ service

Autoglass

Description of good/ service

Autoglass for Ford Motor Company

Type of product

Intermediate

SKU (Stock Keeping Unit)

1.724.534 m2

Total emissions in kg CO2e per unit

9.7

±% change from previous figure supplied

-13

Date of previous figure supplied

June 30 2017

Explanation of change

13% decrease in CO2 emission per unit in comparison to 2016 data is achieved, due to energy efficiency projects managed by Şişecam. 9.7 kg CO2e per m2 autoglass is an average value since, this product is manufactured in different automotive plants.

Methods used to estimate lifecycle emissions

ISO 14040 & 14044

Name of good/ service

Glass packaging

Description of good/ service

Pepsico bottle

Type of product

Intermediate

SKU (Stock Keeping Unit)

14.724 ton

Total emissions in kg CO2e per unit

0.7

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

As the data is requested from Pepsico in this year for the first time, we had not supplied data for the previous year. Thus, it is not

possible to calculate the change from the previous figure supplies. For 2017, 0.7 kg CO₂/kg glass 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

Tableware

Description of good/ service

Pepsico glass

Type of product

Final

SKU (Stock Keeping Unit)

966 ton

Total emissions in kg CO₂e per unit

1.63

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

As the data is requested from Pepsico in this year for the first time, we had not supplied data for the previous year. Thus, it is not possible to calculate the change from the previous figure supplies. 1.63 kg CO₂/kg glass an average value since, this product is manufactured in different tableware plants.

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.

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

0.71

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.

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

1.43

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.

Name of good/ service

Autoglass - Autoglass for Ford Motor Company

Please select the scope

Scope 1

Please select the lifecycle stage

Production

Emissions at the lifecycle stage in kg CO2e per unit

0.2

Is this stage under your ownership or control?

Yes

Type of data used

Primary

Data quality

Data is directly related to fuel (for heating purposes) used in production. The data provided is very reliable.

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

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.

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

1.63

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.

Name of good/ service

Autoglass - Autoglass for Ford Motor Company

Please select the scope

Scope 2

Please select the lifecycle stage

Production

Emissions at the lifecycle stage in kg CO2e per unit

9.48

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

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

Please confirm below

I have read and accept the applicable Terms