Welcome to your CDP Climate Change Questionnaire 2022

C0. Introduction

C0.1

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

Şişecam, 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, Şişecam diversified its activities and expanded further in the global markets. Today, as a result of specialization and highly competitive operations, Şişecam 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 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 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 Şişecam's sustainability strategy.
As part of Şişecam's Sustainability Priorities study conducted in 2021, Şişecam compiled the views of managers and employees at all levels of the organization, determined the material topics and targets that are important within the scope of company activities and areas of influence, and formulated the 2022-2030 Sustainability Strategy.

These targets are realized within an effective governance structure. In this respect, in Şişecam and its activity areas, 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. Şişecam aim 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 Şişecam employees and stakeholders. All the activity areas of Şişecam operations are in line with ISO 14001 Environmental Management System and ISO 50001 Energy Management System principles.

Şişecam consists of diverse activity fields related to different types of glass:
Flat Glass: In the field of flat glass, Sisecam 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: In the field of tableware, Sisecam is carrying out the activities of 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: In the field of glass packaging, Sisecam produces designed glass packaging of different colors and sizes for the food, beverage, alcoholic drinks, pharmaceutical and cosmetic sectors.
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 and USA.
Prior to the One Şişecam merger that realized this year, all Şişecam subsidiaries were regularly assessed in the Borsa Istanbul (BIST) Sustainability Index. As a result of the assessment in 2021, Şişecam protects its position as SISECAM (SISE) in the December 2021 – October 2022 period in the BIST Sustainability Index (XUSRD).

C0.2

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

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1, 2021	December 31, 2021	Yes	1 year

C0.3

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

Bulgaria
Italy
Turkey

C0.4

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

TRY

C0.5

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

Financial control

C-CH0.7

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

Row 1

Bulk organic chemicals

Bulk inorganic chemicals

Other chemicals

Other, please specify

Glass production

C0.8

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

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	TRASISEW91

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Other C-Suite Officer	"Chief Strategy Officer" is responsible for management of sustainability strategy and setting sustainability targets for all Şişecam operations. The officer is also a member of Sustainability Committee and follows up company's progress according to Sisecam CareforNext Sustainability targets. (For instance, emission&waste reduction targets, investments and feasibility studies to reduce total emissions and increase renewable energy capacity etc.) Chief Strategy Officer focuses on climate change, circular economy as well as all aspects of sustainability strategy and sustainability projects, Şişecam. "Chief Strategy Officer" is also the main representative of climate-related issues.
Board-level committee	In addition to the Sustainability Executive Committee, consisting of Şişecam Executive Board members, a Board Level Sustainability Committee with members from the Şişecam Board and chaired by the Chairperson was established in 2021. Şişecam adopts pursuing corporate sustainability and creating value for all its stakeholders as the basis of its way of doing business. Şişecam's corporate sustainability strategy was shaped in an integrated way around the axes of "PROTECT" "EMPOWER" and "PROGRESS" in line with the United Nations Sustainable Development Goals, reflecting the sustainability priorities of the organization. Through this strategy, the Sustainability Committee works to accelerate the integration of sustainability into Şişecam's structure. The Committee aims to identify the relevant policies and approaches by adopting the efforts at the highest level.
Board-level committee	

C1.1b

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

Frequency with which climate-	Governance mechanisms into	Please explain

related issues are a scheduled agenda item	which climate-related issues are integrated	
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding risk management policies Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues	Şişecam adopts pursuing corporate sustainability and creating value for all its stakeholders as the basis of its way of doing business. Şişecam's corporate sustainability strategy was shaped in an integrated way around the axes of "PROTECT" "EMPOWER" and "PROGRESS" in line with the United Nations Sustainable Development Goals, reflecting the sustainability priorities of the organization. Through this strategy, the Sustainability Committee works to accelerate the integration of sustainability into Şişecam's structure. The Committee aims to identify the relevant policies and approaches by adopting the efforts at the highest level. The Sustainability Executive Committee annually reports its activities to the CEO. The Committee carries out vision, priority and strategy formulation efforts related to sustainability. The Sustainability Executive Committee is charged with internal and external stakeholder communication in addition to the sustainability targets and performance monitoring of the working groups. The Committee is chaired by Şişecam's CEO and consists of the Executive Board members of the Committee. The Committee evaluates the developments related to the studies and objectives of the working groups.

C1.1d

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

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues
Row 1	Yes	Board Member: Prof. Dr. Şener Oktik At national level he is the Honorary Chairman Turkish Solar Energy Industry Association, a member of steering committee of Turkish Clean Energy Foundation, a member of advisory committee to Turkish Science, Technology and Innovation Policies Council. His competency is based on: - Foundational knowledge and skills: include science and

		environmental literacy, knowledge of the policy landscape and management acumen - Organizational knowledge and experience: include strategic planning, decision making, compliance, enterprise risk management, asset management, the management of value and supply chains, corporate communications and corporate social responsibility and organizational governance - Strategic execution competencies are largely skills based and include supporting organizational change, helping to mitigate risk, engaging stakeholder, being actively involved in policy efforts beyond the walls of the organization and maintaining other external partnerships. Independent Member: Dinç Kızıldemir Dinç Kızıldemir was appointed as an Independent Member in line with the Corporate Governance Principles of the Capital Markets Board of Turkey at the Ordinary General Meeting of Shareholders by our company on March 21, 2018.

C1.2

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

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Sustainability committee	Both assessing and managing climate-related risks and opportunities	Quarterly
Environment/ Sustainability manager	Managing climate-related risks and opportunities	More frequently than quarterly
Other C-Suite Officer, please specify Chief Strategy Officer	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other committee, please specify Sustainability Executive Committee	Both assessing and managing climate-related risks and opportunities	Quarterly
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	
Other, please specify Chairman of the Board	Other, please specify Chairperson is responsible for participation to Sustainability Executive Committee	

Other committee, please specify The Board of Directors Sustainability Committee	Both assessing and managing climate-related risks and opportunities	

C1.2a

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

Şişecam adopts pursuing corporate sustainability and creating value for all its stakeholders as the basis of its way of doing business. Şişecam's corporate sustainability strategy was shaped in an integrated way around the axes of "PROTECT" "EMPOWER" and "PROGRESS" in line with the United Nations Sustainable Development Goals, reflecting the sustainability priorities of the organization. Through this strategy, the Sustainability Committee works to accelerate the integration of sustainability into Şişecam's structure. The Committee aims to identify the relevant policies and approaches by adopting the efforts at the highest level.

The main responsibilities of the Committee include, integrating sustainability principles into Şişecam's processes, determining and implementing operational improvement activities, preparing and circulating the Corporate Sustainability Strategy, defining sustainability targets and coordinating, directing and supervising the activities of sub-working groups within the Sustainability Committee. .
Şişecam's Sustainability Directorate directly reports to Chief Strategy Officer. Sustainability Directorate focuses on coordinating the corporate sustainability activities by connecting teams responsible for production, communications, human resources, infrastructure, procurement and quality. At the same time, it monitors climate-related issues and implements innovative practices relating to corporate sustainability reporting, supply chain sustainability, sustainability training programs, measurement of sustainability efficiency, environment & quality management, etc.

C1.3

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

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Şişecam aims to reveal new and original practices or approaches by using the know-how, experience and creativity of its employees as well as their productive curiosity dynamism. Applications aimed at increasing organizational development and creativity are supported with the NAR Suggestion Development System. Şişecam Corporate Rewarding Mechanism (NAR) evaluates the

		successful projects that apply to have an award. Energy efficiency and reduction as well as emissions reduction projects are evaluated.

C1.3a

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

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction project Emissions reduction target	According to Şişecam's goal oriented structure, the performance of employees' is measured by an annual systematic method. Performance management system implemented in order to reward the employees' success proportionally for their adding value to Şişecam as well as in order to do the proper planning of their career development. Şişecam top management is also subject to annual assessment within the scope of annual performance targets. Beginning with the CEO, the annual targets are broken down and included in the annual scorecards of all employees. The realization of annual targets affects the performance score and accordingly the success bonus. The personal performance bonus is derived in terms of a performance factor. Climate and energy targets are also among the targets included in the score card.
Board/Executive board	Monetary reward	Emissions reduction project Emissions reduction target	According to Şişecam's goal oriented structure, the performance of employees' is measured by an annual systematic method. Performance management system implemented in order to reward the employees' success proportionally for their adding value to Şişecam as well as in order to do the proper planning of their career development. Şişecam top management is also subject to annual assessment within the scope of annual performance targets. Beginning with the CEO, the annual targets are broken down and included in the annual scorecards of all employees. The realization of annual targets affects the performance score and accordingly the success bonus. The personal performance bonus is derived in terms of a performance factor. Climate and energy targets are also among the targets included in the score card.

Other C-Suite Officer	Monetary reward	Emissions reduction project Emissions reduction target	According to Şişecam's goal oriented structure, the performance of employees' is measured by an annual systematic method. Performance management system implemented in order to reward the employees' success proportionally for their adding value to Şişecam as well as in order to do the proper planning of their career development. Şişecam top management is also subject to annual assessment within the scope of annual performance targets. Beginning with the CEO, the annual targets are broken down and included in the annual scorecards of all employees. The realization of annual targets affects the performance score and accordingly the success bonus. The personal performance bonus is derived in terms of a performance factor. Climate and energy targets are also among the targets included in the score card.
All employees	Monetary reward	Emissions reduction project Energy reduction project Efficiency project Behavior change related indicator	Şişecam Corporate Rewarding Mechanism evaluates the successful projects that apply to have an award. Energy efficiency and reduction as well as emissions reduction projects are evaluated.

C2. Risks and opportunities

C2.1

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

Yes

C2.1a

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

	From (years)	To (years)	Comment
Short-term	1	3	

Medium-term	3	5	
Long-term	5	20	

C2.1b

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

Şişecam's, risk management activities are carried out with a holistic and proactive approach based on enterprise risk management principles. As it operates in an intense domestic and international competitive landscape, Şişecam implements effective risk management and internal audit processes to provide adequate risk assurance to its stakeholders, and constantly reviews and improves its process to respond to the needs.

Substantial financial or strategic impact is defined as risks with medium and high-risk amounts. Şişecam defines a substantive financial or strategic impact as anything that significantly affects the company's financial position or ability to manufacture or sell its products with a certain probability that could have a negative / positive impact on the achievement of targets. Main targets are growth, profitability, efficiency and sustainable levels of business. Materiality for prioritization is measured as amount of risk (average negative impact on earnings), including climate change related risks, for profit/loss and cash flow as well as image / reputation by the magnitude of impact and likelihood of occurrence. As a response to those, necessary measures are considered within the investment projects and operational strategies with Finance & Energy Procurement and Strategy Departments. Multidisciplinary approach is implemented in defining short, medium and long term impact and setting the strategy accordingly.

According to the Corporate Risk Management principles, "substantive financial or strategic impact" is defined as financial impact which effects 2 million Turkish Liras or more. Climate Change risks which are under Environmental Risks are not evaluated under this definition.

C2.2

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

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

Annually

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

Companywide risk management practices including surveys, internal audit activities and feedback mechanisms are systematically and actively in place by use of digital platforms and awareness bulletins are communicated frequently on the basis of risk appetite. The results of regular meetings with the Early Risk Detection Committee, Audit Committee and Corporate Governance Committee are reported to the Board of Directors in accordance with the legislation. These activities are intended to reassure stakeholders, safeguard the tangible and intangible assets of Şişecam, conserve its resources, protect the environment, minimize losses originating from uncertainties and maximize potential benefits gained from opportunities.

Regulatory financial impacts such as EU ETS related short-medium-long term impacts, carbon pricing in the geographies of operations, adaptation needs according to the physical impacts of climate change are closely screened and followed up. Şişecam monitors the Climate and Energy Legislation, which was planned to be updated under the European Green Deal, and carried out through the affiliated sector associations in Europe.

Guidance and contributions were made as part of Şişecam's European activities. Evaluation and impact analysis of the EU Carbon Border Regulation Mechanism was studied during the year. This mechanism is the most critical focus area of climate regulations under the European Green Deal and matches with Şişecam activities. To ensure its roadmap is supported by effective targets in combatting climate change, Şişecam launched a SBTi preperation project in 2021 including GAP analysis, needs assessment, scope and roadmap determination via evaluation of Şişecam's main business activities within the scope of science-based targets on climate change.
In line with our commitment to"PROTECT THE PLANET" as part of our strategy, we have adopted a clear vision to become CARBON NEUTRAL by 2050. The summer of 2021, when we witnessed extremely devastating climate disasters all over the world, was a clear proof of global warming. As Şişecam, we accept the plain reality of the climate crisis and act with full responsibility as an active business partner for its resolution. In the coming periods, we will continue to act with the same approach and produce solutions that meet the needs of the planet and are compatible with the environment.

C2.2a

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Turkey's Energy Efficiency Law, Energy Strategy Plan and National Climate Change Action Plan and Green Deal guided the industry for the energy targets. In order to reduce energy consumption, efficiency projects are applied and EU ETS Directives and international benchmarks are followed up.
Emerging regulation	Relevant, always included	Şişecam follows up the project on Partnership for Market Readiness (PMR), governed by Ministry of Environment and Urbanism and takes parts in workshops related to this project. The key objective of the project is to define the Structure of Emission Trade System of Turkey with "Market Based Instrument" to cope with climate change and to be implemented in Turkey. Şişecam reviews and give comments onn draft "Climate Law" and "ETS Regulation". Upcoming EU Carbon border tax, Green Deal strategy is followed up.
Technology	Relevant, always included	In accordance with the developments in technology, in order to protect market share, Şişecam follows up the technology and investment potentials in research and development of new technologies as well as improvements. For instance light weight glass, electric /hybrid furnaces etc.
Legal	Relevant, always included	Turkey's Energy Efficiency Law, Energy Strategy Plan and National Climate Change Action Plan guided the industry for the energy targets. In order to reduce energy consumption, efficiency projects are applied. Moreover, Şişecam follows up the revised National Energy Strategy Plan and related regulations. Green Deal and Fit for 55 package in EU is also continuously followed up . Engages with related corporate functions (Energy, Procurement and Finance) in the fields of E ETS and Required EUA finance is budgetized on annual basis while EU ETS market is closely followed up regularly.
Market	Relevant, always included	In order to protect market share, Şişecam follows up the technology and invest in research and development. Supported with Şişecam's circular economy vision, increasing recovery of glass cullet which reduces GHG emissions is always prioritized.
Reputation	Relevant, always included	Due to increased public concern both in Turkey and in rest of the world, climate change is an important issue in managing corporate reputation. Today, it is critical that companies safeguard their reputations through effective communications with all their stakeholders about their environmental performance on climate change issue. This risk may impact Şişecam's reputation also.

		Moreover, Şişecam focuses on sustainability of the operations, development of climate friendly products and introduces online applications to the partners to ensure optimum selection of climate friendly products. Şişecam Sustainability Directorate directly reports to Chief Strategy Officer and has a robust sustainability approach. As part of Şişecam business operations, all relevant risks effecting Corporate Strategy including sustainability and reputational aspects are overviewed and integrated into management of change process. Şişecam has access to corporate databases for monitoring all peer views and corporate scores on financial and sustainability aspects.
Acute physical	Relevant, sometimes included	Globally, much more extreme and variable weather conditions are expected in the future. Floods, sudden temperature rises and decreases forms a risk for Şişecam plants and its supply chain. Supply chain risk assestment processes are strenghtining Şişecam's resiliance capacities on Climate change. These risks and their potential impacts are analyzed and reported by Şişecam.
Chronic physical	Relevant, sometimes included	IPCC SRES emission scenarios and physical impacts on Şişecam's geographical operations are followed up.

C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Current regulation

Carbon pricing mechanisms

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

In accordance with decisions and negotiations regarding Paris Agreement, the Republic of Turkey and EU including Bulgaria presented their Nationally Determined Contribution (NDC) towards achieving the ultimate objective of the United Nations Framework Convention on Climate Change Turkey committed up to 21 percent reduction in GHG emissions from the Business as Usual (BAU) level by 2030. The European Union and its 28 Member States including Bulgaria submitted a joint NDC which is at least 40% domestic reduction in GHG emissions by 2030 compared to 1990. Related Ministries are working on many strategies and action plans to combat climate change which will directly influence business sectors. As a response, sectoral market strategies are updated with recognition of such impacts and opportunities. In Europe, we are regulated by the EU-ETS for all our European operations, which includes 4 glass manufacturing plants. The EU-ETS has introduced Phase IV in 2021, which made Sisecam observe an increase in direct costs through Increased price of EUAs on the market associated with the mechanism.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

18,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Even though the estimation of CO2 prices are hard it can be assumed that the prices will go up due to EUTS. With that assumption the prices in for Şişecam is calculated as 18 M EUR.

Cost of response to risk

2,300,000

Description of response and explanation of cost calculation

Those increases made Sisecam Group to establish the decarbonization taskforce and hedging mechanism to design a specific short term response plan. If no mitigation

strategies had been put in place, we could have had a yearly financial impact of up to 69 M EUR

As a result of this risk, in 2021 Sisecam decided to put in place a regional-wide decarbonization roadmap.This will result in an annual CO2 emission reduction in Europe by a further 15 percent like-forlike, representing 3 million tons, by 2022. We have also diversified our energy efficiency efforts to reduce greenhouse gas emissions from our production activities based on the vision of a low-carbon business model and climate-positive products in the value chain within the scope of the “PROTECT THE PLANET” philosophy included in our CareForNext 2030 strategy. As a result of steps we took in that direction in 2021, we have reduced our greenhouse gas emission intensity by 5% while saving approximately 58 million TRY in energy costs. In accordance with the theoretical study carried out for furnaces, specific measures and advanced measures for each plant were evaluated.If optimization and efficiency projects are applied before 2030, the cost of implementation of the systems would be expected around 2.3 M EUR, however if the projects are applied close to 2030, the operational cost would increase to 4 M EUR.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation
Carbon pricing mechanisms

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

Turkish Ministry of Environment and Urbanism is working on many strategies and action plans to combat climate change, which will have a direct impact to business sectors. Şişecam attends and takes an important role in workshops and meetings focused on adaptation to climate change regulations for Turkey.

For Şişecam operations in Bulgaria (as an EU country) main risks are related to increase of carbon price and exclusion of glass sector from carbon leakage list. Şişecam follows up and contribute Glass Alliance Europe's studies on EU regulations which affect glass business. Glass Alliance Europe is an association which coordinates European glass industries' views on common environmental and regulatory challenges.

Management actions related to this risk are being implemented.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

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

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

Cost of response to risk

Description of response and explanation of cost calculation

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

Comment

Şişecam, as one of the main players of the sector, attends the workshops organized by Ministry of Environment and Urbanism and gives great support by providing feedback and recommendations about emissions, quotas, carbon leakage threat and appropriate emission control systems in the sector. The aim of these workshops is to ensure multi-stakeholders engagement to provide the necessary inputs for improvement of Turkey's position in the international negotiations.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Carbon pricing mechanisms

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

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

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

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

Cost of response to risk

Description of response and explanation of cost calculation

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

Comment

C2.4

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

Yes

C2.4a

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

Identifier

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

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

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

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

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

Sisecam implements related activities studies and projects by: (a) Lobbying activities: In order to introduce the contribution of its products to energy saving and economy, Şişecam has been an active member of several associations such as Glass for Europe,

Association of Turkish Building Material Producers (IMSAD) and Association of Thermal Insulation, Waterproofing, Sound Insulation and Fireproofing Material Producers, Suppliers and Applicators (IZODER). Şişecam also takes part in several organizations. b) Collaboration with Policy Makers: As the most important sector representative, Şisecam collaborates with experts from Ministry of Environment and Urbanism,Ministry Of Science Industry and Technology and Ministry of Energy and Natural Resources. c) Research and development activities: Şişecam focuses on its research and development activities for developing new environment friendly high added value products. d) Commercials: Advertisement campaign of products which provided advanced level of isolation compared to standard double glasses is managed.

Mentioned actions are implemented.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Upstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Renewable Energy And Green Building Construction Technology
Furthermore, governments across multiple countries have also endeavoured to encourage the adoption of renewable energy sources to extend profitable opportunities to the market players in the forecast period of 2022 to 2029. Additionally, the advent of green building construction technology, which increasingly exploits solar photovoltaic glasses as a part of sustainable construction further expand the future growth of the solar photovoltaic glass market. Voluntary regulation on ‘Certification of sustainable sites with sustainable green buildings’ is published by Ministry of Environment and Urbanism. Şişecam also follows up to developments against the national strategy on sustainable cities. The regulation aims to set the principles and procedures related to evaluate and certify green buildings, green sites. This creates an opportunity for Şişecam's energy efficient products.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The global solar control glass market reached a value of US$ 5.46 billion in 2021. Looking forward, the market is projected to reach a value of US$ 9.38 billion by 2027, exhibiting a CAGR of 9.20% during 2022-2027. Şişecam's location in the sector is critical.
With this regulation main concepts of green buildings such as energy efficiency, renewable energy, lighting, local material, ecolabels get more importance than before. This will directly influence the demand for high value added products like low e, solar control, thermal insulation and solar control glasses.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

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

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Upstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

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

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

26,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

According to the IEA solar PV is expected to account for the largest annual capacity additions for renewables for the next 5 years. The solar photovoltaic glass market was valued at USD 4.42 billion in 2021 and is expected to reach USD 84.14 billion by 2029, registering a CAGR of 30.80% in 2022-2029.
Şişecam is one of the promising companies that enable greenhouse gas emission reduction and energy saving by its sustainability projects and main products. This awareness is expected to increase the demand for Şişecam's energy efficient products such as low-e and solar control glass and provide R&D activities on these issues. We expect a growth in low-carbon product demand of 5% to 10% on a yearly basis. Besides, consumption of glass containers and bottles due to its endless recycle

capability compared to alternative packaging materials, is expected to increase. Total sales of Şişecam Flat Glass is 5.3 Billion TRY in 2021. Based on 5% increase in demand, we expect 26 M TRY annually sales increase in energy efficient flat glass.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

Sisecam implements related activities, studies and projects with the aim of differentiating its products in the growing competitive environment, increasing the awareness towards its brands and widening their utilization. Şişecam implements social responsibility projects such as Glass and Glass Again. Sustainability Report is an other example to respond accordingly. Şişecam Sustainability report is published for the operations in Turkey and abroad (including; Flat Glass, Automotive, Glass Packaging, Glassware and Chemicals business lines) Moreover, Şişecam takes part in Istanbul Stock Exchange Sustainability Index (BIST SI) which also evaluates climate change performance indicators in detail. Şişecam completed its branding studies covering its current product range to be employed commonly in all markets. In order to obtain consumer feedback, consumer surveys are performed, analysed and strategic plans are issued accordingly. For example, with its experienced team, Şişecam Flat Glass offers glass consultancy to project decision makers such as architects, facade consultants, investors and contractors on their projects and develops solution offers according to project requirements. For new products, R&D studies and marketing of products are going on. Mentioned actions are implemented. 245 M TRY for the R&D activities are done where 28% accounts for sustainability projects which is 50 M TRY in 2021 .

Comment

C3. Business Strategy

C3.1

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

Row 1

Transition plan

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

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

C3.2

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

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

C3.2a

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

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios IEA STEPS (previously IEA NPS)	Company-wide		1) Reason for selecting this scenario: The STEPS provides a more conservative benchmark for the future, because it does not take it for granted that governments will reach all announced goals. Şişecam's 2030 position was analysed. For each type of production, Şişecam studied (i) business as usual scenario including investment and production projections, (ii) measures scenario involving applicable technologies and (iii) advanced measures scenarios including innovative technologies. In each scenario, the CO2 level that Şişecam will reach by 2030 was calculated and cost estimations were done. 2) Timescale: 2030 was chosen. Although Turkey's national targets point to the year 2053, a transformation is required in the industry for the resilient and net zero pathway starting from 2030. Therefore, Şişecam analyzed the transformation in the shorter term and evaluated the technological options . 3) Scope: Scope 1 and Scope 2 emissions 4) Analysis result and impacts on business objectives and strategies: As a result of production-based analysis, measures to be implemented, investments to be planned, R&D subjects and "emerging" technologies to be followed were determined. In response to this estimate, Sisecam has prioritised measures including more renewables, waste heat recovery and energy optimisation and included investment-based emerging technologies in its medium and long-term strategy. 5) Impact on our strategies and business plan:

			Şişecam has included waste heat recovery and renewable investments and energy saving projects in its short-term investment plan. As of 2021, the installation of rooftop photovoltaic solar power plants on the roofs of our facilities has been completed, producing a total of 6.3 MWp. We are targeting a total installed power from renewable energy sources of 53 MW by 2030. To this end, evaluation and prefeasibility studies are being carried out for the installation of solar and wind power plants at our facilities. In addition to the investment plans, strategic analyses regarding the supply and use of maximum cullet were started. In 2021, to improve the know-how, a new project decision for the full electric glass furnace has been evaluated and approved. In addition to all these, alternative fuel technologies, especially hydrogen, were included in the corporate R&D agenda.

C3.2b

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

Row 1

Focal questions

1. In the scenario study, the increase in GHG emissions, increase in energy need and intensity values were studied until 2030 in accordance with the BAU scenario.
2. Measures to be taken on the basis of business lines and the effect of further measures were studied.
3. It has been analyzed which technologies should be prioritized until 2030.

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

1. Şişecam has gathered its priorities for decarbonization under three headings: rapid action, planned investment and R&D studies. These results determined the 2030 targets and annual investment priorities.
2. The effects of 17 different sector-specific and advanced measures were investigated. Accordingly, it has been concluded that the most financially effective and result-oriented measure is to increase the use of cullet. The estimated investment value to be reached with the measures scenario was found to be 70 Million Euros.
3. Şişecam has gathered its priorities for decarbonization under three headings: rapid

action, planned investment and R&D studies. These results determined the 2030 targets and annual investment priorities.

C3.3

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

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	We expect increases in demand for products that contribute to mitigation of and adaptation to climate change along with the accelerated global movement towards a decarbonized or low carbon society. Şişecam has identified the opportunities for climate change mitigation through its high value added products (such as low e, tentesol titantium, solar flat glass etc.) and defines this area as an opportunity due to its climate and energy friendly sustainable products. From this point of view, it has taken actions such as increasing the share of sustainable products in total production, accelerating R&D studies within this scope, and strengthening product communications. In this regard, in addition to the existing EPD documents, Sisecam has initiated a comprehensive EPD (Environmental Product Declaration) study for many different products (such as coated glass types, ultralight glass packaging and 100% recycled glassware). Considering sustainable products that make a difference in Flat Glass, Auto Glass, Glass Packaging, Glassware and Chemicals, it will be ensured that life cycle analysis, environmental labeling/eco-label (EPD: Environmental Product Declaration) and other relevant certification (GRS - Global Recycle Standard etc.) studies for the selected products are carried out, and institutional capacity in this field will thus be developed. In the new period, it is planned to set targets regarding the share of such products in the total product range.

		In addition to direct work, lobbying efforts to support renovation and promote climate-friendly glass systems in buildings continued. Besides, Sisecam made its first investment in biotechnology in 2021 as part of the Basalia Project which will become the main contributors to the achievement of green hydrogen production and carbon capture. Total sales of Şişecam Flat Glass is 5.3 Billion TRY in 2021. Based on 5% increase in demand, we expect 26 M TRY annually sales increase in energy efficient flat glass.
Supply chain and/or value chain	Yes	(i) Prioritization: Environmental, Social and Governance (ESG) priorities are addressed in all phases of supplier management including evaluation, implementation, monitoring and development. Within the scope of effective supply chain management and a responsible purchasing approach, we want to make sure that the way Şişecam's suppliers do business is in compliance with the "Şişecam Supplier Code of Conduct". (ii) Security of Supply Chain: For a flexible and uninterrupted supply chain, the importance of supplier diversification, localization/indigenization and getting closer to the source has increased, and alternative/sustainable supply sources have been introduced to prevent possible interruptions and delays in the value chain. levels are managed optimally and by answering market conditions in an agile and robust way, a proactive supply chain approach was demonstrated. Investment in R&D Yes Şişecam invests in low carbon. (iii) Supplying Alternative Raw Materials: Sisecam plans to reduce the carbon intensity of our raw material inputs by using natural soda in soda production and glass cullet in glass production, and to reduce emissions during production and transportation with lighter products in short & mid term. As a company operating in every field of glass production, we conduct our circular economy practices within our glass recycling facilities and aim to increase our external cullet rate which improves energy efficiency and reduces production based GHG emissions. In this direction, pilot projects involving the value chain were developed for the supply of more cullet, and smart user solutions were worked out in order to provide direct access to the customers. (iv) Holistic Analysis for the Reduction: In order to reflect the action against climate change to the entire value chain, a new

		assessment study was started in 2021. In the study, which was designed to make an GAP analysis and to prepare for the Science Based Initiative, we aim to improve our infrastructure for the determination of ambitious corporate climate targets aligned with international agreements. In this context, a quick scan for Scope 3 emissions has been completed and a high-resolution calculation and reduction alternatives will be prepared next year.
Investment in R&D	Yes	1-Sustainable Products: Şişecam has identified the opportunities for climate change mitigation through its high value added products (such as low e, tentesol titantium, solar flat glass etc.) and defines this area as an opportunity due to its climate and energy friendly sustainable products. In this direction, we aim to increase the number of sustainable product patents we hold, increase the share of sustainable products in our turnover, produce new sustainable solutions and products (including the BASALIA project), and evaluate the effects on all stages of the product lifecycle through the Life Cycle Analysis Program. In order to achieve these goals, we continue to work on product development in different sectors with innovative projects carried out at the Şişecam Science Technology and Design Center. At the same time, we have cooperated with the world's leading companies and carried out studies to produce climate friendly products. In this context, we are carrying out Solar Mirror development activities for the solar energy sector (CSP power plants) and have developed environmentally friendly Flotal E Max products to meet the demands of both the Turkish and European markets. 2-Low Carbon Technologies: Within the scope of existing technologies: we implement energy efficiency and saving projects in the applications we carry out within Şişecam in the fastest way, and make the most of electrification and green electricity opportunities. We are working to ensure that the technologies that are developing and that we plan to integrate into our processes to include at least one of the hydrogen energy, bioenergy and carbon capture and storage technologies. The most important study is related to the use of electricity in glass melting. Şişecam started a concept study for fully electric melting in 2021. On the other hand, increasing the electric-boost ratio in conventional furnaces is a subject that is being studied by R&D. The use of hydrogen as an alternative fuel in glass production or enrichment with hydrogen is also on the agenda of R&D.

		In this sense, the most important breakthrough has been Basalia Technology, which is expected to offer solutions in terms of carbon capture and blue hydrogen production. Sisecam allocated a R&D budget of 175 million TRY in 2021 and 28% of all expenditures into R&D were for sustainability projects.
Operations	Yes	(i) Operational Targets & Measures: Climate change issues have significantly been impacting on each manufacturing site's efforts to reduce GHG emissions. In 2021, Sisecam defined energy efficiency targets and breakdown in terms of production plant. These targets were assigned to the top managers of the facilities as performance targets. In this context, they were expected to determine investments and operational measures (include maintenances and renewals of main equipment and furnaces to improve their efficiency, using more external cullet, recovery of furnace heat loss, etc.). CareforNext Strategy and "PROTECT THE PLANET" axe of the philosophy; as a result of steps we took in that direction in 2021, we have reduced our greenhouse gas emission intensity in our operations by 5% while saving approximately 58 million TRY in energy costs. (ii) Investments: It was requested to determine the investment plans that each facility needs in order to reduce its operational footprint. According to the investment priorities, it is ensured to be included in the annual investment plans.

C3.4

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

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs Capital expenditures Assets Liabilities	Direct Costs and liabilities: Carbon trading and carbon tax costs associated with climate change regulations have been identified as direct impacts. Sisecam's glass production facilities operating in Europe are subject to EU-ETS and face direct costs annually. In order to manage these costs, Sisecam has developed an ETS strategy and takes action to meet the needs optimally by making use of different mechanisms (including hedging) in the EU ETS market and to provide financial benefits from quota excesses. On the issue of carbon border tax, which will be on the agenda in exports from Turkey to the EU,

		financial impact studies have been carried out and updates are made in line with political revisions. In this context, the carbon trading/carbon tax costs are included in investment plans and is addressed in profit-loss projections. In this context, we may face financial risks from 2025 and 2030 with the effect of ETS revision and CBAM. Therefore Sisecam may face some impact in a medium term, our equity capital might decline, and the debt ratio might increase due to a decline in profit arising from strengthened carbon pricing measures of governments of each country. Indirect Costs: The effect of carbon pricing on energy costs is defined as indirect costs. Especially the increases in electricity prices are evaluated in this context. As decarbonization of the power system gradually leads to higher electricity prices. Especially, options for increasing the share of electricity in production; evaluated on the basis of indirect effects. Capital expenditure: In a medium term, we consider that there would be unavoidable rises in the energy price due to conversions from coal and heavy oil to LNG and other low-carbon fuels and renewable energies. In addition, IEA scenarios estimated carbon prices in developed countries as $100/t-CO2 in 2030 and $140/t-CO2 in 2040. The analysis shows that additional investments raise capital costs. The transition to net-zero greenhouse emissions by 2050 will require an extra $3.5 trillion a year in capital spending on physical assets for energy and land-use systems , according to estimates from a new McKinsey report. In accordance with the BAU scenario, it is estimated that the total energy increase will be 25% in 2030 due to production increase and furnace aging. + CAPEX: Cold repairs were carried out in Şişecam. Modifications compatible with new melting technologies are also carried out in newly commissioned furnaces. Revenues: As part of EU Green Deal, which has been started in 2019, demand for Şişecam's products serving for low carbon economy (low e, tentesol titanium, solar glass etc.) is expected to increase which will result in increase of revenues in five years time. As an example Şişecam has identified the production line investments according to the increase of demand. In this direction, we aim to increase the number of sustainable product patents we hold, increase the share of sustainable products in our turnover, produce new sustainable solutions and products. Assets: Climate change risks are also included in the Şişecam Annual Risk Perception Survey, which is arranged every year. It is seen that the risk of climate change, which is evaluated under the title of "Changing Climate Conditions" in the survey, has increased its importance in terms of awareness. In a medium term, external stakeholders might negatively assess products or manufacturing facilities with low carbon productivity

		in our business portfolios, and as a result, we might incur losses.

C4. Targets and performance

C4.1

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

Intensity target

C4.1b

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

Target reference number

Int 1

Year target was set

2018

Target coverage

Business division

Scope(s)

Scope 1
Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Intensity metric

Metric tons CO2e per metric ton of product

Base year

2017

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

0.67

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

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

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

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

55

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

55

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

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

55

Target year

2022

Targeted reduction from base year (%)

5

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

% change anticipated in absolute Scope 1+2 emissions

5

% change anticipated in absolute Scope 3 emissions

0

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

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

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

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

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

Target status in reporting year

Is this a science-based target?

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

Target ambition

Please explain target coverage and identify any exclusions

Target is to reduce GHG emission (scope 1 and scope 2) intensity of glass production by 5% from 2017 baseline till 2022. In 2021 we reduced our net CO2 emissions per gross ton of glass as 1,4 %. Going one step further, Sisecam is conducting a baseline study for partnering with SBTi to develop a roadmap for aligning climate targets.

• Increased use of glass cullet reduced CO2 emissions. (Every 10% increase in cullet results in an average 5% reduction in CO2 emissions)

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

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

C4.2

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

Other climate-related target(s)

C4.2b

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

Target reference number

Oth 1

Year target was set

2018

Target coverage

Business division

Target type: absolute or intensity

Intensity

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

Energy consumption or efficiency

GJ

Target denominator (intensity targets only)

metric ton of product

Base year

2017

Figure or percentage in base year

8

Target year

2022

Figure or percentage in target year

7.84

Figure or percentage in reporting year

7.57

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

268.75

Target status in reporting year

Underway

Is this target part of an emissions target?

No

Is this target part of an overarching initiative?

Low-Carbon Technology Partnerships initiative

Other, please specify

As a part of our CareforNext Strategy and PROTECT THE PLANET philosophy.

Please explain target coverage and identify any exclusions

Target is to reduce annual energy consumption intensity by 2% till 2022 for glass production facilities (GJ/ton melted glass). Total of 599,932 GJ energy saving.

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

Monitoring and optimization of energy efficiency of glass furnaces, utilization of waste heat, use of cullet, conducting energy audits and determining efficiency-enhancing projects

List the actions which contributed most to achieving this target

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Target reference number

Oth 2

Year target was set

2018

Target coverage

Business division

Target type: absolute or intensity

Absolute

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

Renewable fuel production

Other, please specify

MW

Target denominator (intensity targets only)

Base year

2017

Figure or percentage in base year

6

Target year

2022

Figure or percentage in target year

12

Figure or percentage in reporting year

6.3

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

5

Target status in reporting year

Underway

Is this target part of an emissions target?

No

Is this target part of an overarching initiative?

Other, please specify

As a part of our CareforNext Strategy and PROTECT THE PLANET philosophy.

Please explain target coverage and identify any exclusions

Target is to produce 12 MW electricity from renewable energy resources.

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

Maintaining existing facilities in order to increase renewable energy production, taking measures for optimization

List the actions which contributed most to achieving this target

C4.3

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

Yes

C4.3a

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

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation		
To be implemented*		
Implementation commenced*		
Implemented*	75	5,437
Not to be implemented		

C4.3b

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

Initiative category & Initiative type

Estimated annual CO2e savings (metric tonnes CO2e)

1,116

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

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

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

Payback period

Estimated lifetime of the initiative

Comment

Initiative category & Initiative type

Non-energy industrial process emissions reductions

Process equipment replacement

Estimated annual CO2e savings (metric tonnes CO2e)

4,320

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

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

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

Payback period

Estimated lifetime of the initiative

Comment

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 solutions. Şişecam invests in low carbon product research & developments activities and continues to research and develop technologies in addition to applying advanced technologies in the fields of advanced furnace control technologies, waste heat recovery, and high glass cullet use. Energy efficiency investments are defined separately in annual investment plans and priority is given to these investments. Efficiency increasing projects determined as a result of energy audits are evaluated annually.
Compliance with regulatory requirements/standards	Our fundamental approach on climate change regulation requirements and standards is to comply with legislation concerning climate change and environment applied to each site. Turkey: In line with the Turkish Energy Efficiency Law (no 5627) and Regulation on "Improving Energy Efficiency on Energy Usage, we aim to increase efficiency in using energy sources and energy in order to use energy effectively, avoid waste heat. In this context, annual energy audits are made by independent and authorized institutions, reported and efficiency-enhancing measures are developed. Within the scope of the regulation on Monitoring and Reporting of Greenhouse Gas Emissions, the emissions are monitored, verified and reported annually. In accordance with decisions regarding Paris Agreement, the Republic of Turkey presented its Nationally Determined Contribution (NDC) towards achieving the ultimate objective of the United Nations Framework Convention on Climate Change , whereby Turkey is committed up to 21 percent reduction in GHG emissions from the Business as Usual (BAU) level by 2030. Ministry of Environment and Urbanism is working on many strategies and action plans to combat climate change that will directly influence business sectors. However, it is still not clarified how the target will be distributed to different sectors. It is for sure that restrictions on greenhouse gas emissions will be applied. The Partnership for Market Readiness (PMR) Project

	governed by Ministry of Environment and Urbanism aims to identify potential alternatives to govern the carbon mechanisms nationwide (for example carbon taxes, carbon-trading systems etc.). To this end, the Ministry of Environment and Urbanism makes extra effort to engage private sectors in the preparations. Şişecam is actively involved in these projects and provides feedback and required technical inputs. In new investments internal carbon pricing is considered. European Union: Our facilities operating in the EU are included in the scope of EU-ETS. In addition to monitoring, reporting and "emission trading" obligations, all regulations within the scope of energy efficiency are complied with. Likewise, annual energy audits are carried out and the situation is reported to the official authorities. Revisions within the scope of the Green Deal are closely monitored and working closely with government and industry associations.
Employee engagement	Şişecam as of the end of 2021, gave average training time per employee as 22.2 hours in Türkiye. The topics included environmental trainings with increasing numbers.

C4.5

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

Yes

C4.5a

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

Level of aggregation

Group of products or services

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

Other, please specify

The GHG Protocol for Project Accounting, ISO 14064-2 Greenhouse gases – Part 2, Guidelines for Quantifying GHG emission reductions of goods or services through Global Value Chain by the Ministry of Economy, Trade and Industry

Type of product(s) or service(s)

Other

Other, please specify

solar/energy control glasses

Description of product(s) or service(s)

Special products in flat glass segment are in the low carbon category with their energy efficiency during use. With our coated flat glass solutions, such as our Solar Low-E coated glass, produced under the brand of Isıcam K T to combat climate change, heat losses are reduced by 50% and solar heat input by 40–65% when compared to ordinary double glazing, hence saving fuel in winter and reducing the energy consumption of air conditioning systems in summer. Şişecam Glass for Photovoltaics and Şişecam Glass for Solar Thermal Collector directly affect the efficiency of solar panels with their high light transmittance performance. In addition, the glass protects the internal parts of solar panels, which generate electricity from solar energy, against environmental conditions. Produced in the “Sandy” and “Prism” patterns, Şişecam Glass for Photovoltaics and Şişecam Glass for Solar Thermal Collector reduce the reflections on the glass surface with its patterned structure. As a result, the specially developed glass achieves maximum efficiency in the performance of solar panels and collectors with their high light transmittance and low reflection values. Thanks to the anti-reflective (AR) coating on glass surfaces, light reflections are minimized. Furthermore, the light transmittance of the glass was increased by 2%, further boosting solar panel performance and ensuring high efficiency.

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

Yes

Methodology used to calculate avoided emissions

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

Cradle-to-gate

Functional unit used

Reference product/service or baseline scenario used

Flatglass

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

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

Explain your calculation of avoided emissions, including any assumptions

No data

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

C5. Emissions methodology

C5.1

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

No

C5.1a

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

Row 1

Has there been a structural change?

No

C5.1b

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

	Change(s) in methodology, boundary, and/or reporting year definition?
Row 1	No

C5.2

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

Scope 1

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

3,019,245,079

Comment

Scope 2 (location-based)

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

6,722,827

Comment

Scope 2 (market-based)

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

0

Comment

Scope 3 category 1: Purchased goods and services

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 2: Capital goods

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

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

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 4: Upstream transportation and distribution

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 5: Waste generated in operations

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 6: Business travel

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 7: Employee commuting

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 8: Upstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 9: Downstream transportation and distribution

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 10: Processing of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 11: Use of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

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

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 13: Downstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 15: Investments

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.3

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

ISO 14064-1

C6. Emissions data

C6.1

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

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

3,019,245,079

Start date

January 1, 2021

End date

December 31, 2021

Comment

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

2,203,490

Start date

January 1, 2020

End date

December 31, 2020

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

Comment

C6.3

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

Reporting year

Scope 2, location-based

6,722,827

Start date

January 1, 2021

End date

December 31, 2021

Comment

Past year 1

Scope 2, location-based

477,111

Start date

January 1, 2020

End date

December 31, 2020

Comment

C6.4

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

No

C6.5

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

Purchased goods and services

Evaluation status

Relevant, not yet calculated

Please explain

Capital goods

Evaluation status

Not relevant, explanation provided

Please explain

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

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

Evaluation status

Not relevant, explanation provided

Please explain

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

Upstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Please explain

Waste generated in operations

Evaluation status

Not evaluated

Please explain

Business travel

Evaluation status

Relevant, not yet calculated

Please explain

Employee commuting

Evaluation status

Relevant, not yet calculated

Please explain

Upstream leased assets

Evaluation status

Relevant, not yet calculated

Please explain

Downstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Please explain

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

The majority of the Şişecam products are ready to be consumed or distributed. Only a part of flat glass and container glass products are processed afterwards. However, reliable data are difficult to obtain due to wide range of large and small workshops.

Use of sold products

Evaluation status

Not relevant, explanation provided

Please explain

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

End of life treatment of sold products

Evaluation status

Not evaluated

Please explain

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

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

Franchises

Evaluation status

Not evaluated

Please explain

Investments

Evaluation status

Not relevant, explanation provided

Please explain

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

Other (upstream)

Evaluation status

Please explain

Other (downstream)

Evaluation status

Please explain

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date

End date

Scope 3: Purchased goods and services (metric tons CO2e)

Scope 3: Capital goods (metric tons CO2e)

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)

Scope 3: Business travel (metric tons CO2e)

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

We don't include Scope 3 emissions yet. We are working on a methodology.

C6.7

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

No

C6.10

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

Intensity figure

0.000192888

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

3,691,527,795

Metric denominator

unit total revenue

Metric denominator: Unit total

19,138,150,643

Scope 2 figure used

Location-based

% change from previous year

42

Direction of change

Increased

Reason for change

C7. Emissions breakdowns

C7.1

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

Yes

C7.1a

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

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	3,019,245,079	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Turkey	2,400,015
Bulgaria	376,657
Italy	241,511

C7.3

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

By business division
By activity

C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
Glass packaging	1,121,053
Automotive glass	2,667
Flat glass	1,571,164
Glassware	324,360

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Glass packaging	1,121,053
Automotive glass	2,667
Flat glass	1,571,164
Glassware	324,360

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

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

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

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Turkey	558,871	
Bulgaria	60,598	
Italy	32,941	

C7.6

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

By business division
By activity

C7.6a

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

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Glass packaging	310,561	
Automotive glass	60,853	

Flat glass	205,919	
Glassware	94,949	

C7.6c

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

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Glass packaging	310,561	
Automotive glass	60,853	
Flat glass	205,919	
Glassware	94,949	

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

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

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

C-CH7.8

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

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

C-CH7.8a

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

	Sales, metric tons	Comment
Carbon dioxide (CO2)		-
Methane (CH4)		
Nitrous oxide (N2O)		

Hydrofluorocarbons (HFC)		
Perfluorocarbons (PFC)		
Sulphur hexafluoride (SF6)		
Nitrogen trifluoride (NF3)		

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)	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption			
Other emissions reduction activities			
Divestment			
Acquisitions			
Mergers			
Change in output			
Change in methodology			
Change in boundary			
Change in physical operating conditions			
Unidentified			
Other			-

C7.9b

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

Location-based

C8. Energy

C8.1

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

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

C8.2

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

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

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)				
Consumption of purchased or acquired electricity				
Consumption of self-generated non-fuel renewable energy				
Total energy consumption		16,066	1,150,172	1,150,188

C-CH8.2a

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

Consumption of fuel (excluding feedstocks)

Heating value

LHV (lower heating value)

MWh consumed from renewable sources inside chemical sector boundary

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

Consumption of purchased or acquired electricity

MWh consumed from renewable sources inside chemical sector boundary

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

Consumption of self-generated non-fuel renewable energy

MWh consumed from renewable sources inside chemical sector boundary

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

Total energy consumption

MWh consumed from renewable sources inside chemical sector boundary

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

1,150,188

C8.2b

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

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

C8.2c

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

Sustainable biomass

Heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Other biomass

Heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Coal

Heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Oil

Heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Gas

Heating value
LHV

Total fuel MWh consumed by the organization
19,865,236

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat
19,865,236

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Natural Gas

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

Heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Total fuel

Heating value

LHV

Total fuel MWh consumed by the organization

19,895,138

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

19,895,138

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Total

C8.2d

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	7,741,243			
Heat				
Steam				
Cooling				

C-CH8.2d

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

Electricity

Total gross generation inside chemicals sector boundary (MWh)

0

Generation that is consumed inside chemicals sector boundary (MWh)

Generation from renewable sources inside chemical sector boundary (MWh)

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

Heat

Total gross generation inside chemicals sector boundary (MWh)

Generation that is consumed inside chemicals sector boundary (MWh)

Generation from renewable sources inside chemical sector boundary (MWh)

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

Steam

Total gross generation inside chemicals sector boundary (MWh)

Generation that is consumed inside chemicals sector boundary (MWh)

Generation from renewable sources inside chemical sector boundary (MWh)

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

Cooling

Total gross generation inside chemicals sector boundary (MWh)

Generation that is consumed inside chemicals sector boundary (MWh)

Generation from renewable sources inside chemical sector boundary (MWh)

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

C8.2g

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

Country/area

Turkey

Consumption of electricity (MWh)

933,120,284

Consumption of heat, steam, and cooling (MWh)

0

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

933,120,284

Country/area
Bulgaria

Consumption of electricity (MWh)
148,428

Consumption of heat, steam, and cooling (MWh)
0

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

148,428

Country/area
Italy

Consumption of electricity (MWh)
68,640

Consumption of heat, steam, and cooling (MWh)
0

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

68,640

C-CH8.3

(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?
No

C9. Additional metrics

C9.1

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

Description

Energy usage

Metric value

39,684,663

Metric numerator

GJ

Metric denominator (intensity metric only)

% change from previous year

Direction of change

Please explain

C-CH9.3a

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

Output product

Other, please specify

Glass production

Production (metric tons)

Capacity (metric tons)

Direct emissions intensity (metric tons CO2e per metric ton of product)

Electricity intensity (MWh per metric ton of product)

Steam intensity (MWh per metric ton of product)

Steam/ heat recovered (MWh per metric ton of product)

Comment

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

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

	Investment in low-carbon R&D	Comment
Row 1	No	

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 third-party verification or assurance

C10.1a

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

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

Page/ section reference

Relevant standard

ISO14064-1

Proportion of reported emissions verified (%)

98

C10.2

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

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

C11. Carbon pricing

C11.1

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

Yes

C11.1a

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

EU ETS

C11.1b

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

EU ETS

% of Scope 1 emissions covered by the ETS

0.24

% of Scope 2 emissions covered by the ETS

0.173

Period start date

Period end date

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO2e

624.08

Verified Scope 2 emissions in metric tons CO2e

93.978

Details of ownership

Comment

C11.1d

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

Şişecam's glass production plants in Bulgaria and Italy have been subject to the EU ETS. Those plants are remain to benefit from free allocations during the 4th phase (2021-2025) of the EU ETS. Starting from 2020 and continuing, our company has adopted centralized EU allowance account system for those plants and opted in hedging instruments for managing bullish price developments of EU ETS for gaining advantages of the most plausible market prices throughout the hedging period.

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

Other, please specify

supplier Code of conduct including environmental and climate priorities/material issues

Details of engagement

Other, please specify

Şişecam evaluates the holistic impact of its supply chain on climate change. With SBTi (science based initiative) pre-study, it is aimed to determine Scope 3 emissions in particular and to clarify their reduction potentials.

% of suppliers by number

% total procurement spend (direct and indirect)

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

Rationale for the coverage of your engagement

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

Impact of engagement, including measures of success

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

Comment

Şişecam has been conducting a GAP analysis and target setting project within the scope of SBTi (science For this purpose, the entire value chain is being reviewed, including the procurement step. As the analysis study complete it will allow us to guide and engage with suppliers more effectively towards Şişecam's climate actions.

C12.1d

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

(i) Methods: Şişecam's engagement strategy is based on data and information sharing. Şişecam considers the perspective of the Entire value chain in collecting and providing data, identifying potential improvement points across the value chain, sharing information for joint projects and collaborations, evaluating customer demands and incorporating them into the strategy. Sisecam provides requested information regarding to Şişecam's climate change strategy and energy saving activities through CDP Supply Chain Program, Questionnaires of Specific Customers, Sustainability Reports , Sustainability Indexes and IFC/EBRD Reports.
(ii) Strategy: Şişecam is prioritizing the engagement activities based on main trends and customer demands, promotes collaboration with the key B2B clients for combating climate change opportunities.
(iii) Measures: Şişecam commits to supply the required information, as reliable and accurate.
(iv) Collaborations: In 2020, Şişecam has worked with the International Commission on Glass (ICG) for the declaration of 2022 as the International Year of Glass by the United Nations (UN). And, The application has been approved at the UN General Council meeting in May 2021. The 35th Glass Symposium was also held on digital platform by Şişecam in line with new global trends caused by the pandemic in 2020. The symposium took place in four sessions on November under the theme "Glass in sustainable future: Pandemic and New Ecosystem". It was live broadcast on online platforms and a total of 758 people, including 737 viewers, 14 panellists and seven moderators, from 39 countries across five continents participated in the event. Şişecam attentively follows Horizon 2020 Calls, calls for the Innovation Fund financed via EU Emissions Trading System (EU ETS), as well as the EU projects and promotions carried out by TÜBİTAK (Scientific and Technological Research Council of Turkey). Regarding the H2020 call, Şişecam contacted ETN (European Turbine Network), coordinator of the project LC-SC3-CC-9-2020 Industrial (Waste) Heat-to-Power conversion with a project budget of € 18-20 Million. The key goal of the project is to unlock the technological infrastructure for developing high pressure (>100 bar) and more efficient turbines through use of super-critical liquid CO2 as an example of best practice in waste heat recovery technique and to double the energy production efficiency of conventional waste heat recovery facilities. Therefore, carbon footprint reduction is aimed to be doubled, as well. Other partnering firms in the consortium: ETN, RINA C *(consultancy),* ENGIE *(gas company),* MAS *(power generation and management),* EDF *(power distribution),* SIEMENS, SIEMENS HEAT *(heat exchanger),* BAKER HUGHES *(oil & gas),* CEMEX *(cement),* HEATRIC *(power block and heat exchanger).*

C12.2

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

No, and we do not plan to introduce climate-related requirements within the next two years

C12.3

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

Row 1

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

Yes, we engage directly with policy makers
Yes, we engage indirectly through trade associations
Yes, we engage indirectly by funding other organizations whose activities may influence policy, law, or regulation that may significantly impact the climate

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

No, and we do not plan to have one in the next two years

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

Şişecam is in contact with the government and relevant institutions to develop strategy, targets, technology implementation and most importantly, policy makers in order to realize its vision on combating climate change. Şişecam has taken part in relevant projects (such as GIZ: Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, PMR) and represented the industry, especially in shaping the administrative instruments such as the National ETS that will guarantee Turkey's climate change targets.

C12.3a

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

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

Circular economy

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

Policy and administrative targets to support cullet recovery, which is the most ideal method for production-related GHGE reduction.
• Regulation on the Management of Packaging Waste
• Mandatory Deposit and Return Scheme
• End-of-Waste Approach
• Pioneering the standard of National Eco-Labelling Criteria

Policy, law, or regulation geographic coverage

National

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

Turkey

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

Support with major exceptions

Description of engagement with policy makers

Şişecam encourages and sponsors the "curb-side collection" of glass containers and recycle them. Şisecam has been collaborating with Ministry of Environment and Urbanism, local municipalities and recyclers for collecting and recycling glass containers. Şişecam represents the sector in terms of determining the targets and criteria in this regard, and setting up the structure and methodology.
Şişecam encourages and sponsors the "curb-side collection" of glass containers and recycle them. Şisecam has been collaborating with Ministry of Environment and Urbanism, local municipalities and recyclers for collecting and recycling glass containers.

"The Glass and Glass Again" Project launched by Şişecam aims to create awareness about recycling glass packaging and ensuring high recycling rates. Şişecam supports separate collection of glass packaging and the increase of glass cullet ratio in glass container productions. Şişecam Çevre Sistemleri A.Ş. continues
efforts to bolster the glass-recycling infrastructure in Turkey. In this context, the installation of glass recycling facilities of the companies that provided financial support and expertise services was completed in 2019. Şişecam Çevre Sistemleri A.Ş. also launched a QR-code label application to keep inventory of glass recycling bins and track them via a system. National ecolabel: Within the scope of EU Integration Process Support Activities, coordinated by Republic of Turkey Ministry of Environment, Urbanization and Climate Change, Şişecam supported the "National Environmental Label System Establishment Project" to determine the environmental label criteria for the glass product group (flat glass, glass packaging, glassware) in line with the Environmental Label Regulation
(No.30570 dated October 19,2018) in 2021.

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

- Increasing cullet recovery by introducing mandatory deposits
- Exclusion of scrap glass from the category of waste
- The main use of cullet in the production of glass packaging
- Definition of cullet usage target for glass packaging production

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

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

Emissions trading schemes

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

Policy and administrative targets to help

• establishing the regulatory, institutional and technical infrastructure of a national trading system which is enabling the use of carbon pricing tools

Policy, law, or regulation geographic coverage

National

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

Turkey

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

Support with major exceptions

Description of engagement with policy makers

In accordance with decisions regarding Paris Agreement, the Republic of Turkey presented its Intended Nationally Determined Contribution (INDC) towards achieving the ultimate objective of the United Nations Framework Convention on Climate Change , whereby Turkey is committed up to 21 percent reduction in GHG emissions from the Business as Usual (BAU) level by 2030.

Ministry of Environment and Urbanism is working to establish the regulatory, institutional and technical infrastructure of the monitoring, reporting and verification system (MRV) for greenhouse gas (GHG) emissions towards the EU ETS standard.

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

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

• Capacity development for implementing an national ETS including establishment of the regulatory, institutional and technical infrastructure of the MRV system, sector-specific guidelines and capacity building activities for all relevant stakeholders.

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

C12.3b

(C12.3b) Provide details of the trade associations your organization engages with which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association

Is your organization's position on climate change consistent with theirs?

Unknown

Has your organization influenced, or is your organization attempting to influence their position?

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

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

C12.3c

(C12.3c) Provide details of the funding you provided to other organizations in the reporting year whose activities could influence policy, law, or regulation that may impact the climate.

Type of organization

State the organization to which you provided funding

-

Funding figure your organization provided to this organization in the reporting year (currency as selected in C0.4)

Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate

Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?

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 voluntary sustainability report

Status

Attach the document

Page/Section reference

Content elements

Comment

C15. Biodiversity

C15.1

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

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues

Row 1	No, and we do not plan to have both within the next two years

C15.2

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

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity
Row 1	No, and we do not plan to do so within the next 2 years

C15.3

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

	Does your organization assess the impact of its value chain on biodiversity?
Row 1	No, and we do not plan to assess biodiversity-related impacts within the next two years

C15.4

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

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?
Row 1	No, and we do not plan to undertake any biodiversity-related actions

C15.5

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

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No	

C15.6

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

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located

No publications		

C16. Signoff

C-FI

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

-

C16.1

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

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

SC. Supply chain module

SC0.0

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

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

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

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

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

• Automotive Glass: Şişecam Automotive, which implements sophisticated glass projects in car, light and heavy commercial vehicle segments, participates in different projects as the co-design

partner of original equipment manufacturers. As Turkey's leader and biggest automotive glass producer, the company is the supplier of automotive manufacturers.

SC0.1

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

	Annual Revenue
Row 1	19,138,150,643

SC1.1

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

Requesting member

The Coca-Cola Company

Scope of emissions

Scope 1

Allocation level

Business unit (subsidiary company)

Allocation level detail

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

Emissions in metric tonnes of CO2e

29,098

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

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

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

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

Requesting member

The Coca-Cola Company

Scope of emissions

Scope 2

Allocation level

Business unit (subsidiary company)

Allocation level detail

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

Emissions in metric tonnes of CO2e

8,406

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

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

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

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

Requesting member

PepsiCo, Inc.

Scope of emissions

Scope 1

Allocation level

Business unit (subsidiary company)

Allocation level detail

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

Emissions in metric tonnes of CO2e

12,019

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

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

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

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

Requesting member

PepsiCo, Inc.

Scope of emissions

Scope 2

Allocation level

Business unit (subsidiary company)

Allocation level detail

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

Emissions in metric tonnes of CO2e

3,358

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

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

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

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

Requesting member

Ford Motor Company

Scope of emissions

Scope 1

Allocation level

Business unit (subsidiary company)

Allocation level detail

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

Emissions in metric tonnes of CO2e

959

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

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

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

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

Regional Boundary: In the emission calculations, Group operations in Turkey were taken into account.

Requesting member
Ford Motor Company

Scope of emissions
Scope 2

Allocation level
Business unit (subsidiary company)

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

Emissions in metric tonnes of CO2e
24,464

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

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
GHG sources were identified on the base of ISO 14064-1 Standard and all of these Scope 2 emission sources are within the boundaries of the facilities and under the Şişecam Group's operational control. • Emission Factors: Emission factors from 2006 IPCC guidelines were applied in the calculations. • Regional Boundary: In the emission calculations, Group operations in Turkey were taken into account. (Last year scope1 and scope 2 numbers were mistakenly reversed)

Requesting member

Renault Group

Scope of emissions

Scope 1

Allocation level

Business unit (subsidiary company)

Allocation level detail

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

Emissions in metric tonnes of CO2e

307

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

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

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

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

Requesting member

Renault Group

Scope of emissions

Scope 2

Allocation level
Business unit (subsidiary company)

Allocation level detail
Şişecam Group’s automotive glass plant in Turkey supply automotive glass to Renault.

Emissions in metric tonnes of CO2e
6,787

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

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
GHG sources were identified on the base of ISO 14064-1 Standard and all of these Scope 2 emission sources are within the boundaries of the facilities and under the Şişecam Group’s operational control. • Emission Factors: Emission factors from 2006 IPCC guidelines were applied in the calculations. • Regional Boundary: In the emission calculations, Group operations in Turkey were taken into account.

Requesting member
Electrolux

Scope of emissions
Scope 1

Allocation level
Business unit (subsidiary company)

Allocation level detail
Şişecam Group’s automotive glass plant in Turkey supply glass to Electrolux.

Emissions in metric tonnes of CO2e

455

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

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

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

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

Requesting member

Electrolux

Scope of emissions

Scope 2

Allocation level

Business unit (subsidiary company)

Allocation level detail

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

Emissions in metric tonnes of CO2e

8,530

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

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

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

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

SC1.2

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

The amount of emission (Scope I and Scope II) generated by our operations in the reporting period, is published in annual sustainability reports and CDP Climate Change responses . The references are as follows:
https://www.sisecam.com.tr/en/sustainability/reporting/sustainability-report

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 Şişecam plans its production for B2B specific clients and has right infrastructure in

	place to track their product specific footprint (scope 1 and scope 2)

SC1.4

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

No

SC1.4b

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

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

SC2.1

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

Requesting member

The Coca-Cola Company

Group type of project

New product or service

Type of project

New product or service that has a lower upstream emissions footprint

Emissions targeted

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

Estimated timeframe for carbon reductions to be realized

1-3 years

Estimated lifetime CO2e savings

Estimated payback

Details of proposal

With the climate-related projects managed by Şişecam, carbon emissions are expected to be reduced, greater amount of product is expected to be produced with less raw material. Advantages are expected to be gained in product transportation such as ease carrying and less emissions during transportation. Mentioned projects are as follows: 1. Şişecam encourages and sponsors the “curb-side collection” of glass containers. Şisecam has been collaborating with Ministry of Environment and Urbanism, local municipalities and recyclers for collecting and recycling of container glass. With this sense, Şişecam manages ”The Glass and Glass Again” Project as one of Turkey’s most comprehensive sustainability projects. This project is conducted in line with three main targets: • Raising awareness and informing society about the recycling of glass packaging • Developing infrastructure for the collection of glass packaging waste • modernizing plants where glass packaging waste is collected and processed and separating glass packaging waste mixed in with domestic waste prior to regular storage. Şişecam also collaborated with district municipalities to raise social awareness on the issue, improve the infrastructure for collection, and streamline facilities for glass recycling. During the events, carried out under the Glass and Glass Again project, aiming to raise awareness by conveying the contribution of recycling to the environment for a sustainable future with various communication activities. 2. Şişecam manages light-weight glass packaging production project. With this project, savings are secured in raw materials, energy and water while nothing is lost from the volume, durability and visual quality of the product.

SC2.2

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

No

SC4.1

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

Yes, I will provide data

SC4.1a

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

3.5

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)

50.287 ton

Total emissions in kg CO2e per unit

0.63

±% change from previous figure supplied

3.2

Date of previous figure supplied

July 31, 2021

Explanation of change

Glass bottles are manufactured in different plants, thus average value of emission (kg CO2/kg glass product) is provided.

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)

2.745.834 m2

Total emissions in kg CO2e per unit

3.6

±% change from previous figure supplied

5

Date of previous figure supplied

July 31, 2021

Explanation of change

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

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)

15.641

ton

Total emissions in kg CO2e per unit

0.62

±% change from previous figure supplied

8

Date of previous figure supplied

July 31, 2021

Explanation of change

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

Methods used to estimate lifecycle emissions

ISO 14040 & 14044

Name of good/ service

Autoglass

Description of good/ service

Autoglass for Electrolux

Type of product

Intermediate

SKU (Stock Keeping Unit)

760.788

m2

Total emissions in kg CO2e per unit

6

±% change from previous figure supplied

7

Date of previous figure supplied

July 31, 2021

Explanation of change

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

Methods used to estimate lifecycle emissions

ISO 14040 & 14044

Name of good/ service

Autoglass

Description of good/ service

Autoglass for Renault

Type of product

Final

SKU (Stock Keeping Unit)

829.907

m2

Total emissions in kg CO2e per unit

4

±% change from previous figure supplied

Date of previous figure supplied

July 31, 2021

Explanation of change

Methods used to estimate lifecycle emissions

ISO 14040 & 14044

SC4.2b

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

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

0.63

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 1 & 2

Please select the lifecycle stage

Production

Emissions at the lifecycle stage in kg CO2e per unit

3.6

Is this stage under your ownership or control?

Yes

Type of data used

Primary

Data quality

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

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

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

0.62

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 Electrolux

Please select the scope

Scope 1 & 2

Please select the lifecycle stage

Production

Emissions at the lifecycle stage in kg CO2e per unit

6

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
-		-		

SC4.2d

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

No

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

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

Please confirm below

I have read and accept the applicable Terms