Module: Introduction

Page: Introduction

CC0.1

Introduction
Please give a general description and introduction to your organization.

Şişecam Group, the foundations of which were laid by Mustafa Kemal Atatürk in 1935 is an industrial group with the main activity fields of glass. Established in 1935 by İŞBANK, Şişecam initially set out to meet the requirements of the country as regard to glass products; in the 1960's, it turned its attention towards exports on the principle that "the whole world is our market". In the 1970's and 1980's the Group diversified its activities and expanded further into global markets.

Today, as a result of specialization and highly competitive operations, Şişecam Group has taken its place among the leading glass manufacturers in the world, in business lines covering all basic fields of glass such as float glass, glass household articles, glass packaging and glass fiber.

Şişecam Group, which has a goal to become as one of the top three companies in the global glass industry by 2020, 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 in foreign countries, Şişecam Group has always considered the environmental awareness and performance as an important responsibility, based on the significance of the approach of sustainable development.

Compliance to environmental legislation 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.

In this respect, in Şişecam and its subsidiary companies, all environmental issues including compliance with the environmental legislation are handled within the framework of Şişecam's Environmental Policy, declared as: Şişecam, as an organization aware of its responsibility towards the protection of environment, believes in the need to maintain the world as a livable place for coming generations. This approach is considered as the corner stone of Şişecam's strategic management and is integrated in every phase of its processes. Our aim is to carry out all environmental protection activities in Şişecam within a framework of an Environmental Management System, by taking into account the sustainability principles and improving the system continuously with the support of all our employees and stakeholders.

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

Flat Glass: Carrying out the activities of Sisecam Group in the field of flat glass, Trakya Cam San.A.Ş. operates in the fields of; Architectural glass (flat glass, patterned glass, mirror, laminated glass and coated glass), Automotive glass and glass for other vehicles, encapsulated glass, Solar glass, Home appliances glass.

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

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

Glass Fibre: Cam Elyaf San. A.Ş. is a corporation of Şişecam Chemicals Group, and produces reinforcing materials from “E” glass fiber for reinforced plastic (GRP) industry.

Except glass manufacturing which is the main field of the Group, chemical production (soda and chromium compounds) industrial raw materials, electricity, Vitamin K3 derivatives, sodium metabisulphite are the other activities of Şişecam. Besides its activities in Turkey, Şişecam has become a global company with its facilities in Bulgaria, Russia, Georgia, Ukraine, Egypt, Bosnia, Germany, India and Italy.

CC0.2

Reporting Year
Please state the start and end date of the year for which you are reporting data.
The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.
We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.
Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Wed 01 Jan 2014 - Wed 31 Dec 2014

CC0.3

Country list configuration

Please select the countries for which you will be supplying data. If you are responding to the Electric Utilities module, this selection will be carried forward to assist you in completing your response.

Select country
Turkey
Bulgaria

CC0.4

Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

TRY

CC0.6

Modules

As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sub-industries, companies in the oil and gas sub-industries, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco industry group should complete supplementary questions in addition to the main questionnaire.
If you are in these sector groupings (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.
If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see https://www.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx.

Further Information

Module: Management

Page: CC1. Governance

CC1.1

Where is the highest level of direct responsibility for climate change within your organization?

Board or individual/sub-set of the Board or other committee appointed by the Board

CC1.1a

Please identify the position of the individual or name of the committee with this responsibility

"Chief Corporate Development & Sustainability Officer" is responsible for corporate development, improvement management, sustainability strategy and energy production facilities. Chief focuses on climate change, sustainability strategy and sustainability projects, energy efficiency, environmental management and corporate development issues within Şişecam.

CC1.2

Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

CC1.2a

Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
All employees	Monetary reward	Emissions reduction project Energy reduction project Efficiency project	Şişecam Corporate Rewarding Mechanism evaluates the successful projects that apply to have an award.

Further Information

Page: CC2. Strategy

CC2.1

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Annually	Board or individual/sub-set of the Board or committee appointed by the Board	Turkey and Bulgaria	> 6 years	

CC2.1b

Please describe how your risk and opportunity identification processes are applied at both company and asset level

Operating in energy intensive sector, Şişecam Group operations are highly sensitive to all kinds of energy and environment related policies. For this reason, all risk and opportunity identification are assesed for both company and asset level. Therefore; since 2011, Şişecam Group Risk Management Department has been following the environmental issues and evaluating the risks and the potential opportunities. Risk Management Department took the climate change and global warming issue as a separate subject.

With the establishment of Corporate Development and Sustainability Department in August 2013, energy and environmental efficiency started to be treated in much more detailed way. In this respect, risk and opportunities affecting sustainable energy issues are considered for both new investments and existing plants.

Identification and evaluation of risks and opportunities are applied by taking into account regulations, physical change, climate change, changes in market, strategic documents driven by legislations and international agreements.

CC2.1c

How do you prioritize the risks and opportunities identified?

Risk Management Department of the Group implement some surveys and perform workshops with the related managers of the production groups to discuss about the risks that may be exposed in the defined period. By these studies, risk factors are identified and prioritized. Criteria for determining materiality/priorities includes, current or possible regulatory requirements, energy efficiency and security, global and regional regulations, financial factors and public awareness. In this context, the Department use the outcomes of energy and environment related studies such as specific energy consumption trends, short-medium-long term energy efficiency measures, projects and investments. The Environment Team follow and evaluate the current and possible regulatory (climate change related) requirements and inform the related departments of the Group like Risk Management, Finance and Investor Relations Management about risks and opportunities at the regulatory basis.
In addition, Energy Efficiency Division under Corporate Development and Sustainability Department is responsible for conducting detailed energy audits by independent auditors for every plant and implementing the energy efficiency projects identified during these audits in an effort to minimize energy consumption of the plants. Such studies have been continuing since 2012 and first round was completed in 2014.

CC2.1d

Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment

CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

1) How the business strategy has been influenced: As an energy intensive production group, the main climate change issue is environmental performance and energy consumption for all the Şişecam Group Companies. The Group always give great importance on the realization of production with lower energy utilization and integrate energy efficiency aim into its corporate strategy. Reduction in carbon emissions in consequence of reduction in energy consumption will continue to dominate the agenda of Şişecam in the near future, inspiring new project developments. In addition to the routine procedure, with the energy and carbon management approach, short, mid and long-term energy & climate related measures, climate change risks and opportunities are continued to be integrated into Group activities.

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

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

4) The most important components of the Long- term strategy that have been influenced by climate Change: Long term measures into business strategy: (+10 years)

Production of high value added, energy and climate friendly products and optimum usage of renewable energy are in the scope of the Group's common production strategy.

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

6) Most substantial business decision that have been made:

Related to climate change and energy efficiency issues, some significant investments were realized and action decisions were taken such as:

- The integration of carbon and energy management facts into corporate strategy.
- Agreements for waste heat recovery installations that converts the released thermal energy to electrical energy were signed for Glass Packaging Yenisehir, Flat Glas Mersin and Bulgaria Plants.
- Implementation of the online energy management software for the monitoring of energy performance of production plants in the Group.
- Preliminary and comprehensive energy audits by a certified consultant for all Şişecam companies. It has been started in 2012 and completed in 2014 for the plants in Turkey and will be completed in 2015 for the plants in Bulgaria.
- Adaptation of ISO 50001 Energy Management System to all Şişecam Companies, all the Group facilities have been setting up ISO 50001 Energy Management System since 2012. This project is completed for the plants in Turkey and Bulgaria,.
- Usage of energy efficient equipment (electric motors, pumps, fans and other production and auxiliary equipment),
- Integration of Environmental and Energy Policy centrally

CC2.2b

Please explain why climate change is not integrated into your business strategy

CC2.2c

Does your company use an internal price of carbon?

CC2.2d

Please provide details and examples of how your company uses an internal price of carbon

CC2.3

Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Direct engagement with policy makers
Trade associations
Funding research organizations

CC2.3a

On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Energy efficiency	Support	After the end of their life, glass containers do not become waste because glass is 100% infinitely recyclable in a closed loop system, each time a bottle or jar is properly collected and recycled and made into new containers, energy and raw materials are saved and less CO2 is emitted. In general terms, using 10 % recycled glass usage results in an energy saving of 2 - 3 % in the melting process and each tonne of cullet used saves approximately 200-250 kg of CO2 emitted for every tons of glass produced from carbonated virgin raw materials (soda ash, limestone and dolomite). Şişecam encourages and sponsored the “curb-side collection” of glass containers and recycle them. Şisecam Glass Container Group has been collaborating with Ministry of Environment and Civilization, Local Municipalities and recyclers for collecting and recycling glass containers.	Şişecam encourages and sponsored the “curb-side collection” of glass containers and recycle them. Şisecam Glass Container Group 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 Anadolu Cam aims to create awareness about recycling glass packaging and ensuring high recycling rates. Since 2011, 437100 tons of glass packaging waste was recycled.
Other: Determination of sectoral carbon	Support	Ministry of Science, Industry and Technology and The Scientific and Technical Research Council of Turkey (TÜBİTAK) has initiated a project named “Technology	Şişecam’s support will provide the evaluation of the current situation of Turkish Glass Industry in terms of energy & GHG and the identification of the best practices & potential

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
reduction potentials		demand and carbon dioxide emission reduction potentials of Turkish Industry in terms of climate change". As the most important sector representative; Şişecam Group support and provide sectoral information and operational data. As an outcome of the Project a guidance on 'Climate Change and Glass Sector' is published.	applications for energy/carbon reduction in present economic condition. Operational data for the plants in Turkey is provided and C emissions that can be saved through best available techniques are documented.
Other: Recycling	Support	Ministry of Science, Industry and Technology, Directorate General for Industry published National Recycling Strategy Document and Action Plan for 2014-2017 period. Şişecam collaborated with the ministry in the preparation of this document.	One of the targets of the action plan is to prepare feasibility study in the regions where there is not any infrastructure to separate waste collection. Şişecam encourages "curb-side collection" of glass containers and recycle them. Şişecam will work with the ministry and NGOs in order to engage separate waste collection system.
Energy efficiency	Support	The project is being carried out with the support of T.R. Ministry of Science, Industry and Technology and in cooperation with Harran University for the development of high electrical conductivity and high optical-transmittance coatings, which is demanded by optoelectronic applications, using the sol-gel method that is a low-cost alternative to conventional methods.As a result of this project, a large-scale sol-gel coater was won for the Şişecam Science and Technology Center. With the project executed with Akdeniz University under the same support program, coatings were developed for glass packaging products that are transparent and decrease UV transmittance from 70% to 30%	Şişecam supports this project by working in cooperation with T.R. Ministry of Science, Industry and Technology and Harran University.
Energy efficiency	Support	The project funded by the T.R. Ministry of Science, Industry and Technology and conducted in collaboration with GÜNAM (Middle East Technical University Center for Solar Energy Research and Applications) is aimed at applying the new generation nanoscale patterned glasses to photovoltaic solar cells, and the resulting technology will be introduced to the glass industry.	Şişecam supports this project by working in cooperation with T.R. Ministry of Science, Industry and Technology and conducted in collaboration with GÜNAM (Middle East Technical University Center for Solar Energy Research and Applications).

CC2.3b

Are you on the Board of any trade associations or provide funding beyond membership?

Yes

CC2.3c

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
Istanbul Chamber of Industry	Consistent	The main objective of İstanbul Chamber of Industry (ICI) is to fulfill the existing and future needs of the Turkish industry through information, training and consulting services, to improve the international competitiveness of our industry and country and to contribute to the development of the country as a whole. In this respect; ICI is involved in thie climate change issue as "Turkish Industry Representative" and it intends to follow global and national regulations on climate change, train and support the Turkish Industry and contribute national strategies in the industrial perspective.	Şişecam has been an active member of ICI Environmental Management and Policies Commission, in order to: -define realistic targets and strategies for the industry in accordance with Turkey's special conditions on Kyoto Protocol and global competition conditions -Deliver sectoral opinions on Turkey's National Strategy and Regulations. -introduce the contribution of energy efficient products, -provide sectoral opinions and data
Association of Turkish Building Material Producers (IMSAD)	Consistent	Energy efficient renovation of Europe’s existing building stock is crucial for meeting our ambitious energy and climate policy goals. In 2012 IMSAD became a leader of a sectoral collaboration project with regard to Financing Energy Efficiency in Buildings within the frame of EU Regulations and Legal Arrangements. The project named EUbuild is designed to contribute the development of the financial instruments in order to build up the market for energy efficiency in buildings.	Şişecam-Trakya Cam Group has been an active member of IMSAD Sustainability Committee and ,Environmental Friendly Materials Committee in order to introduce the contribution of its products to energy saving and economy.
Glass Alliance Europe	Consistent	Glass Alliance Europe’s work focuses on EU environment policy, marked in recent years by the EU’s Climate Change Policy. Regarding the Commission’s plans to introduce an energy tax coming in this context, GAE has successfully lobbied against the taxation that would seriously hamper the glass industry’s competitiveness. CPIV is now mainly asking that the energy tax be applied equally to all industries so that there would be no unfair competition within European sectors.CPIV has also been involved in the elaboration of the	As a member of Glass Allience Europe, Şişecam follows the EU Regulations and related applications related to climate chance closely. In this way Şişecam has the chance of transferring EU Glass market's experience into national implementations.

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
		draft Directive on emissions trading, also a consequence of the Climate Change Programme. The scheme has been launched in 2005, 3 years before the entry into force of an international regime, and is restricted to trading in CO2 emissions only. CPIV has intervened, replying favourably to the basic principle of the emissions trading scheme but requesting modifications and precisions regarding the methods proposed so as for the scheme to be more balanced. On the occasion of the current review, CPIV has been lobbying actively for considering the difficult competitive situation of the industry and the importance of taking account of the CO2 emission reducing potential of glass (e.g. through the use of double glazing with low-E).	

CC2.3d

Do you publicly disclose a list of all the research organizations that you fund?

No

CC2.3e

Do you fund any research organizations to produce or disseminate public work on climate change?

No

CC2.3f

Please describe the work and how it aligns with your own strategy on climate change

CC2.3g

Please provide details of the other engagement activities that you undertake

CC2.3h

What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Şişecam Group's strategy is based on sustainable energy and environment management and minimum effect to the climate change. All the plants have ISO 14001 and ISO 50001 certification systems. In this respect,the Group monitor its energy consumption level and environmental aspects of its activites periodically and determine action plans to get the solutions for the related problems if there is any.

CC2.3i

Please explain why you do not engage with policy makers

CC2.4

Would your organization's board of directors support an international agreement between governments on climate change, which seeks to limit global temperature rise to under two degree Celsius from pre-industrial levels in line with IPCC scenarios such as RCP2.6?

No

CC2.4a

Please describe your board's position on what an effective agreement would mean for your organization and activities that you are undertaking to help deliver this agreement at the 2015 United Nations Climate Change Conference in Paris (COP 21)

Further Information

Page: CC3. Targets and Initiatives

CC3.1

Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?

No

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment

CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions	Target year	Comment

CC3.1c

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment

CC3.1d

For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions)	Comment

CC3.1e

Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

(i) Corporate Development and Sustainability Department focuses on energy efficiency and environmental management. In energy efficiency concept, Şişecam has been collaborating with an ESCO which was certified as an official energy consultant for Turkish Industry to carry out comprehensive energy audits in Şişecam Production Plants. In this respect, realistic and numeric emission reduction and energy saving targets will be defined in accordance with performance appraisal,

potential evaluation and benchmarking studies. Therefore; no emission target has been identified for this reporting period. Energy audits for the plants in Turkey is completed in 2014 and for the plants in Bulgaria is planned to be completed in 2015. Moreover, energy monitoring software system will be taken into operation in 2015. Thus, with this system setting up energy and carbon reduction targets will be more practical.

(ii) In relation with plans; 20% increase in CO2 emissions is expected.

CC3.2

Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

Yes

CC3.2a

Please provide details of how the use of your goods and/or services directly enable GHG emissions to be avoided by a third party

1) Glass Containers: Glass is 100% infinitely recyclable in a closed loop system, each time a bottle or jar is properly collected and recycled and made into new containers, energy and raw materials are saved and less CO2 is emitted. Using 10 % recycled glass usage results in an energy saving of 2 - 3 % in the melting process and each tonne of cullet used saves approximately 200-250 kg of CO2 emitted for every tons of glass produced from carbonated raw materials (Scope 1). Şişecam encourages and sponsors the “curb-side collection” of glass containers and recycle them. Through light-weight glass packaging production initiatives, savings are secured in raw materials, energy and water while nothing is lost from the volume, durability and visual quality of the product. These initiatives produce additional benefits including reducing the carbon footprint of glass packaging, producing a greater amount of product by using less material, advantages in product transportation, and ease-ofcarrying in the end-use of the filled product.Through these efforts, 38,000 tons of glass were saved, while carbon emissions were reduced by 28,000 tons in the last four years.”The Glass and Glass Again” Project launched by Anadolu Cam is aimed at creating awareness about recycling glass packaging and ensuring high recycling rates. Since 2011 437,100 tons of glass packaging waste was recycled.
2) Flat Glass: In Turkey buildings are responsible for 30% of all energy and 30% of heat loss is from windows A building's windows dramatically affect its energy efficiency. With the solutions in energy and environmental issues, flat glass has a unique role to play in society’s attempt to reduce greenhouse gas emissions and mitigate the effects of climate change. With the coatings applied on the glass surface, float glass becomes an insulation material providing heat and solar control, so it makes an important contribution to energy efficiency in the buildings.
a) Low-Emissivity (Low-e) Glass is treated with a microscopically thin, transparent coating. The coating improves window’s thermal efficiency, lowering the amount of heat that escapes from the window without compromising daylight.
b) Solar Control Glass is a high-performance coated product that deflects a large degree of the sun’s heat while allowing daylight to pass through a window or façade. The indoor space stays bright and much cooler than would be the case if normal glass were used.
c) Solar Energy Systems: Flat glass also plays an important role in the generation of solar power. Solar power technology uses solar panels with photovoltaic cells to convert light from the sun into electricity. Trakya Cam San. A.Ş. which is a subsidiary of Şişecam Group has been carrying on its activities as a strong glass supplier of the expanding focal points in Europe and Turkey in the fields of solar energy and home appliances.

d) Solar control glasses in autoglass: the use of air conditioning in vehicles can generate up to 20% extra fuel consumption. Glazing with advanced solar control properties substantially reduces heat buildup inside vehicles and therefore either reduces the need for air conditioning or helps considerably lower the load on the unit. It has the potential to improve overall fuel consumption efficiency by 2%, and in some cases up to 4%.
3) Glass Fibre: Glass fibre is playing a critical role in helping to achieve energy and climate goals in other areas. Studies have shown that, every 10% reduction in the vehicle weight can reduce fuel consumption from 5 to 8%. In terms of its effect on CO2 emission, reducing vehicle weight by 100 kg brings a CO2 reduction up to 12.5 g/km. Using glass fibre composites in the full vehicle body or several parts of it, is one of the major solutions for light weighted automobiles. Another indirect contribution of glass fibre is production of wind turbine blades. Wind turbine blades must be strong, light and capable of operating for decades without much maintenance. They must be capable of handling the nuances of the wind over a long period of time. With the durability and the lightweight, fibre glass is one of the main components of many large-scale wind turbine blades.
In general, ISO 14064-1 methodology and IPCC Fourth Assessment Method are taken into consideration.

CC3.3

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

Yes

CC3.3a

Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation		
To be implemented*		
Implementation commenced*		
Implemented*	8	11317
Not to be implemented		

CC3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Energy efficiency: Processes	Furnace 10 is repaired and efficiency is improved	3673	Scope 1 Scope 2	Voluntary	1500000	14534800	4-10 years	11-15 years	
Energy efficiency: Processes	Two TA48 Compressor air end upgraded	2596	Scope 2	Voluntary	1006087			11-15 years	
Energy efficiency: Processes	Heat leakage is prevented in varios furnaces	3081	Scope 1 Scope 2	Voluntary	1077876	720000	<1 year	6-10 years	
Energy efficiency: Processes	Compressed air automation is performed	460	Scope 2	Voluntary	210865	60000	<1 year	11-15 years	
Energy efficiency: Processes	1,1 bar lowering compressor output pressure and isolation of high pressure line	487	Scope 2	Voluntary	174459		<1 year	11-15 years	
Energy efficiency: Processes	Compressed air leakage is prevented in various plants	777	Scope 2	Voluntary	369602	12800	<1 year	6-10 years	
Energy efficiency: Processes	Cooling tower pump is optimized (3 unit 55 kw canceled for 1 unit 75 kw pump)	147	Scope 2	Voluntary	60094	121738	1-3 years	6-10 years	
Energy	Fan speed is automized	96	Scope	Voluntary	40000	30000	<1 year	6-10 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
efficiency: Processes			2						

CC3.3c

What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for energy efficiency	Energy intensive sectors face an increasingly competitive global business environment; so the sectoral players seek out opportunities to reduce production costs without negatively affecting product yield or quality. In glass production; energy consumption is more than 20% of the total operational spend. The volatility of energy prices in today's marketplace can also negatively affect predictable earnings. For example, because of its reliance on natural gas as a process fuel, the glass industry was affected especially hard by the seasonal increases in natural gas prices in 2000 Therefore; the main effort of the sector is to reduce the amount of energy required to provide products and services. The challenge of maintaining high product quality while simultaneously reducing production costs can often be met through investments in energy-efficient technologies and practices. Energy-efficient technologies frequently offer additional benefits, such as quality improvement, and increased process efficiency, which can lead to further productivity gains. Energy efficiency is also an important component of a company's environmental strategy, as energy efficiency improvements can often lead to reductions in pollutant emissions. For this reason; continuous improvement activities, related to energy saving is a standard part of main operations in Şişecam production due to its high emission and cost effect.
Compliance with regulatory requirements/standards	Turkish Energy Efficiency Law (2007) and Regulation on "Improving Energy Efficiency on Energy Usage (2008), aim to improve industrial energy efficiency and provide energy savings in the production prcesses. Therefore energy intensive sectors are face with strict constraints. In addition to existing energy efficiency regulations and national energy policy, Turkey has just announced its National Climate Change Action Plan which plans to achieve a significnt level of energy saving by 2020. Turkey is a part to Kyoto Protocol but does not have any country level target related to GHG emissions.

CC3.3d

If you do not have any emissions reduction initiatives, please explain why not

Further Information

Page: CC4. Communication

CC4.1

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	Status	Page/Section reference	Attach the document
In other regulatory filings	Complete	page 5-6-7-13	https://www.cdp.net/sites/2015/42/21142/Climate Change 2015/Shared Documents/Attachments/CC4.1/Bulgaria_CO2 Annual report.pdf
In voluntary communications	Underway - previous year attached	Page 47-51	https://www.cdp.net/sites/2015/42/21142/Climate Change 2015/Shared Documents/Attachments/CC4.1/Sisecam_sustainabilityreport2013.pdf
In other regulatory filings	Complete	Page 60-61	https://www.cdp.net/sites/2015/42/21142/Climate Change 2015/Shared Documents/Attachments/CC4.1/sisecamannualreport_2014.pdf

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

Have you identified any inherent climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Risks driven by changes in regulation
Risks driven by changes in physical climate parameters
Risks driven by changes in other climate-related developments

CC5.1a

Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Emission reporting obligations	In April 25, 2012, a new regulatory framework on 'Monitoring of GHGs Emissions' is adopted in Turkey. THe Regulation aims to set the principles and procedures related to	Increased operational cost	1 to 3 years	Direct	Virtually certain	Low-medium	Regulation on Monitoring, Reporting and Verification of greenhouse gas emissions will come into force in 2015.It will allow government to track industrial emissions with rules similar to European Union's Emissions Trading Scheme.This	Since 2009; Şişecam has been carrying a plenty of basic activities related to expected reporting obligations, such as; collection and evaluation of reliable/verifiable data related to Scope 1 – 2 emissions, adaptation of a corporate based calculation method and preparation of annual inventories. These activities are based on	No additional cost associated with these actions for his year. Şişecam has not invested additional resource to manage this potential risk. Greenhouse gas emissions

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	monitoring, reporting and verification of GHGs resulting from activities listed in Annex I of the by-law. The first year for monitoring is 2015 and the reporting for that year will be in 2016.						regulation will bring some extra responsibilities like reporting and extra cost for verification.	IPCC-2006 and ISO 14064 GHG Standard. On the other hand, for improving data reliability and processing, some internal I.T. solutions were evaluated and adapted to Group Companies. One of the projects concerns to greenhouse gas monitoring plans. According to the regulation related plants has prepared monitoring plans for 2015, got approval from the Ministry. Management actions related to this risk are being implemented.	monitoring plan has been prepared by factory representatives However; in the near future, all the industry will have to pay for the verification step of the MRV system inevitably.
Fuel/energy taxes and regulations	Regarding 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	Increased operational cost	1 to 3 years	Direct	Very likely	Medium	Turkey's Energy Efficiency Law, Energy Strategy Plan and National Climate Change Action Plan guided the industry for the energy targets . Şişecam Group is highly sensitive to all kinds of energy related policies and limitations.Limitations or taxes on fuel/energy usage	In the context of environmental awareness and cost saving, Group Companies attaches great importance on the realization of production with lower energy utilization. Energy consumption quantities are followed and reported Continuous improvement activities related to energy saving became a standard part of main operations in Şişecam production due to	Costs related to consultancy in energy audits is integrated in the budget.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	sector for promoting the competitiveness of the national economy. In order to reach these targets, Turkish Law on Energy Efficiency was enacted in 2007. It introduced significant obligations and sets the rules for energy management in industry. According to the Law, Turkish Industry is obliged to: promote comprehensive energy efficiency audits.						will affect operations directly and will limit productivity. The magnitudes of these risks are still not clear.	its high emission and cost effect. To increase the energy efficiency of Şişecam facilities, a number of energy saving actions have been taken. In addition to these routine actions, all the Group facilities in Turkey and Bulgaria have ISO 50001-Energy Management System. One of the projects concerns to energy audits. Preliminary and comprehensive energy audits by a certified consultant for all Şişecam companies. It has been started in 2012 and completed in 2014 for the plants in Turkey.	
International agreements	Turkey became a party to Kyoto Protocol in 2009 but has	Increased operational cost	>6 years	Direct	More likely than not	Medium-high	Unrealistic emission reduction targets may cause unpredicted cost	As the most important sector representative, Şisecam had a significant role in defining Turkey's	Investments and costs of energy efficiency

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	not defined any reduction target for 2008-2012. However, a new mechanism will be set up for post 2012 and Turkey may specify GHG reduction target at country level and this target will directly influence business sectors. Moreover, due to increasing awareness, Turkey has become more active on international climate change platform. In addition to global effort, as an EU candidate, Turkey act more willingly.						increases and threaten the development of Turkish Industry. Post-Kyoto period will result in substantial future capital costs, loss of revenue and regulated quotas.. If the sectors can not reach the target, they should purchase carbon credits which will directly result in cost increase of products.	industrial energy saving targets for 2011-2023, during the preparation of the National Climate Change Action Plan. During this period, Şişecam collaborated with experts from Ministry of Environment and Civilization, Ministry Of Science Industry and Technology and Ministry of Energy and Natural Sources by providing reliable production/energy/emission data, by sharing its corporate experience on energy saving potentials of glass sector and Best Available Techniques on energy saving. Therefore; law makers could make a characteristic and realistic evaluation for Turkish Glass Industry. Moreover in order to manage this risk, Şişecam implements actions related on energy efficiency projects that result in GHG emissions. Related energy efficiency projects are provided in section 3 as an example.	projects

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Cap and trade schemes	In accordance to National Plan of Harmonization and Accession to the European Union; Turkey plans to be a part of EU-ETS in 2020. In this context; a national cap and trade system which will be compatible with international carbon markets will be established by the Ministry of Energy and Natural Sources.	Increased operational cost	>6 years	Direct	More likely than not	Medium-high	Turkey plans to be a part of EU-ETS in 2019.National cap and trade system will be established. Limitations and penalties will bring financial burden. Another impact will be the reporting and verification fees.The magnitudes of these risks are still not clear.	In addition to routine energy efficiency activities, Group has been monitoring its activity related CO2 emissions continuously. With the experience from Bulgarian Facility which is in the EU-ETS; Group has been following related EU Regulations and applications, evaluating financial impacts by checking over the carbon market trends. In this context; carbon/energy saving projects are evaluated in the perspective of carbon savings. Management actions related to this risk are being implemented. Related energy efficiency projects are provided in section 3 as an example.	No additional cost associated with these actions.

CC5.1b

Please describe your inherent risks that are driven by change in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other physical climate drivers	Increase of GHG concentrations in the atmosphere leads to climate changes and global warming. Globally, much more Extreme and variable weather conditions are expected in the future. . Floods due to sudden temperature rises and decreases forms a risk for our plants and floods can damage the glass furnaces and other operations Extreme rain and storms can hinder the supply of export imported materials and equipment	Reduction/disruption in production capacity	Unknown	Direct	Unlikely	Low	Floods can damage the glass furnaces and can stop the productions. Moreover, extreme rain and storms can hinder the supply of imported some vital materials/equipment and so unexpected long term-delays can occur both in investments and productions. These situations are outside the company's control and may have a significant adverse impact on the company's financial results.	However the potential impact and timeframe of this weather related risks are still unclear. So that the risk were evaluated and partially included in company's current risk strategy. In order to handle such circumstances emergency action plans are implemented. In the long term, in order to handle similar risks; vital equipment and raw materials are stocked. Alternative (for example national) suppliers can be found. Besides, the factory lay-outs and infrastructures are designed due to the	Insurance fee for the facilities are paid.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								related risks. Related projects are being implemented. Also, during deciding new investments facility locations are evaluated according to this risks.	

CC5.1c

Please describe your inherent risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Reputation	Due to increased public concern both in Turkey and in rest of the world, climate change is very important in managing corporate reputation. Today, it is critical that	Wider social disadvantages	>6 years	Indirect (Client)	About as likely as not	Low	There is no tangible financial impacts on Şişecam Group; reputation loss due to climate change effect and emissions;	Şişecam recognize that corporate environmental behavior highly affects the corporate reputation. Therefore related studies and projects are being implemented. Corporate Development and Sustainability Department is established in Şişecam and this department focuses on projects related to corporate	No extra cost associated with these actions. Şişecam will uses its own technical capacity, experience and human sources.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	companies safeguard their reputations through effective communications with all their stakeholders about their environmental performance on climate change issue.						corporate reliability decreases on government level and negatively affect customer behaviour. This limits company's role on future policy and strategies.	development, energy, environment. Şişecam Sustainability Report is used in order to meet expectations of stakeholders. As an indication of its corporate awareness Şişecam has been participating CDP since 2010. In addition to supporting this kind of projects, Group has also been collaborating with Ministry of Environment and Civilization, Ministry Of Science Industry and Technology and Ministry of Energy and Natural Sources by providing reliable production/energy/emission data, by sharing its corporate experience on energy saving potentials of glass sector and Best Available Techniques on energy saving	

CC5.1d

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1e

Please explain why you do not consider your company to be exposed to inherent risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1f

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Page: CC6. Climate Change Opportunities

CC6.1

Have you identified any inherent climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Opportunities driven by changes in regulation
Opportunities driven by changes in physical climate parameters
Opportunities driven by changes in other climate-related developments

CC6.1a

Please describe your inherent opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Fuel/energy taxes and regulations	With regulations such as Energy Efficiency Law and Regulation on Energy Performance in Buildings in Turkey, energy efficiency in buildings are supported. Using 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.	Increased demand for existing products/services	1 to 3 years	Direct	Very likely	Medium-high	This will create opportunities for the market growth of high performance, added value glass products. Increase in demand for Şişecam's energy efficient products such as low-e, solar control and, thermal insulation glass is expected.	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 Europe's Manufacturers of Building, Automotive and Transport Glass (Glass for Europe), Association of Turkish Building Material Producers	Company implements necessary advertisement budget into its general budget

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Existing buildings should get Energy Performance Certificate till 2017.							(IMSAD) and Association of Thermal Insulation, Waterproofing, Sound Insulation and Fireproofing Material Producers, Suppliers and Applicators (IZODER). Group also took part in several organizations in 2014. Collaboration with Policy Makers: As the most important sector representative, Şisecam collaborated with experts from Ministry of Environment and Civilization, Ministry Of Science Industry and Technology and Ministry of Energy and	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								Natural Sources. R&D activities: Şişecam focused on its R&D activities for developing new energy friendly high added value products. (b) Commercials: Advertisement campaign of products which have provided advanced level of isolation compared to standard double glasses.	
Other regulatory drivers	In April 2014, regulation on ‘Certification of sustainable sites with sustainable green buildings’ is published by Ministry of Environment and Urbanism. The regulation aims to set the	Increased demand for existing products/services	1 to 3 years	Direct	Virtually certain	Medium-high	With this regulation main concepts of green buildings such as energy efficiency, renewable energy, lighting, local material, ecolabels get more importance than before.	Şişecam implements lobbying activities and trainings that are performed in order to emphasize the importance of design and material selection in the construction sector.	Company implements necessary advertisement and training budget into its general budget.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	principles and procedures related to evaluate and certify green buildings and green sites that use natural resources and energy efficiently.						This will directly influence the demand for high value added products like low e, solar control, thermal insu lation and solar control glasses.		
Other regulatory drivers	Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy, Law on Energy Efficiency, Electricity Market Law supports usage of renewable energy. The aim of these regulations, is to increase the usage of renewable energy in generating	Increased demand for existing products/services	1 to 3 years	Direct	Very likely	Medium-high	This will create opportunities for the market growth of high performance, added value glass products. Flat glass group has plays an important role in the generation of solar power through solar panels and has been engaging in business activities related to this field. As for wind energy, glass fiber that is used as a	Sisecam implements related lobbying activities, studies and projects. In order to introduce the contribution of its products to economy, Trakya Cam has been an active member of Turkish Photovoltaic Industry Association (GENSED). Group also took part in several organizations	There is no cost related to this item.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	electrical energy, to insert renewable energy sources to economy, to increase source diversification, to decrease greenhouse gas emissions, to protect the environment and to improve the related manufacturing sectors.						main component of many large-scale wind turbine blades because of its durable and lightweight characteristics.	in 2014.	

CC6.1b

Please describe the inherent opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in temperature extremes	2014 has been another year of unparalleled extremes and	Increased demand for existing products/services	>6 years	Direct	Likely	Medium-high	Regulation on Energy Performance in Buildings came	Sisecam implements related activities studies and	The investment costs of new lines.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	disastrous weather events. Changes in temperature, precipitation, and the frequency and severity of extreme events will likely affect how much energy is produced, delivered, and consumed in the world. Buildings can make a major contribution to tackling climate change and energy use. the glass industry has successfully reacted to environmental issues by offering a variety of applications to make buildings more energy efficient and environmental friendly. Today's glass can be practically custom-made to fit into any						into force in December 2009. So that; it is expected an increase in demand for Şişecam's energy efficient products such as low-e and solar control glass.Within the scope of R&D studies, special attention was paid to expansion of energy performance coated flat glass products. New coated glass line investment is taken into operation in Bulgaria float glass line.	projects by 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 Europe’s Manufacturers of Building, Automotive and Transport Glass (Glass for Europe), Association of Turkish Building Material Producers (IMSAD) and Association of Thermal Insulation, Waterproofing, Sound Insulation and Fireproofing Material Producers, Suppliers and Applicators (IZODER). Group also took part in	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	environmental condition and offer specific appearances and performance and energy efficiency.							several organizations in 2014. Collaboration with Policy Makers: As the most important sector representative, Şisecam collaborated with experts from Ministry of Environment and Civilization, Ministry Of Science Industry and Technology and Ministry of Energy and Natural Sources. R&D activities: Şişecam focused on its R&D activities for developing new energy efficient high added value products.	

CC6.1c

Please describe the inherent opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Changing consumer behaviour	It has been observed that ratio of value added coated products on turnover increased regularly. Due to increasing awareness, customer profile has been changing.	Increased demand for existing products/services	>6 years	Indirect (Client)	Likely	Low	Şişecam Group is one of the promising companies that enable greenhouse gas emission reduction and energy saving by its main products.This awareness, is expected to increase the demand for Şişecam's energy efficient products such as low-e and solar control glass and provide R&D activities on this issue.Besides, consumption of glass containers due to its endless recycle capability compared to alternative packaging materials, is expected to increase.	Sisecam implements related activities studies and project with the aim of differentiating its products in the growing competitive environment, increasing the awareness towards its brands and widening their utilization. Şişecam completed its branding studies covering its current product range to be employed commonly in all markets. In order to get consumer feedback, consumer surveys are performed, analysed and strategic plans are issued accordingly. For new products, marketing and R&D studies are going on. In order	Company implements necessary advertisement budget into its general budget. Also costs related to consultancy in sustainability reporting is integrated in the budget.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								to show its awareness; Şişecam participate in Carbon Disclosure Project-Turkey. In addition to these activities; Environmental and Energy Policy is developed centrally and announced it via corporate website. Training programs for key players in the market and customers are implemented by social responsibility projects. Sustainability Report is an other example to manage this opportunity.	

CC6.1d

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1e

Please explain why you do not consider your company to be exposed to inherent opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1f

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Tue 01 Jan 2013 - Tue 31 Dec 2013	3644818
Scope 2	Tue 01 Jan 2013 - Tue 31 Dec 2013	556608

CC7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use
ISO 14064-1

CC7.2a

If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

CC7.3

Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)

CC7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference
Natural gas	56.1	Other: metric tonnes CO2 per TJ	2006 IPCC Guidelines
Diesel/Gas oil	74.1	Other: metric tonnes CO2 per TJ	2006 IPCC Guidelines
Liquefied petroleum gas (LPG)	63.1	Other: metric tonnes CO2 per TJ	2006 IPCC Guidelines
Other: CaCO3	440	Other: kg CO2 per metric tonnes material	2006 IPCC Guidelines
Other: MgCO3	522	Other: kg CO2 per metric tonnes material	2006 IPCC Guidelines
Other: Na2CO3	415	Other: kg CO2 per metric tonnes material	2006 IPCC Guidelines
Other: CaMg3(CO3)4	478	Other: kg CO2 per metric tonnes material	2007/589/EC Annex 9 stochiometric emission factors
Other: K2CO3	318	Other: kg CO2 per metric tonnes material	2006 IPCC Guidelines
Other: BaCO3	223	Other: kg CO2 per metric tonnes material	2006 IPCC Guidelines
Electricity	479.93	kg CO2 per MWh	Green House Gas Protocol-2009 Emission Factor for Purchased Electricity in Turkey
Electricity	463.45	kg CO2 per MWh	Green House Gas Protocol-2009 Emission Factor for Purchased

Fuel/Material/Energy	Emission Factor	Unit	Reference
			Electricity in Bulgaria

Further Information

Page: CC8. Emissions Data - (1 Jan 2014 - 31 Dec 2014)

CC8.1

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Other: Financial and operational

CC8.2

Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e

3816052

CC8.3

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e

595838

CC8.4

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

Yes

CC8.4a

Please provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure

Source	Relevance of Scope 1 emissions from this source	Relevance of Scope 2 emissions excluded from this source	Explain why the source is excluded
Operational buildings (headquarters) except production facilities	Emissions are relevant but not yet calculated	Emissions are relevant but not yet calculated	Emissions from operational buildings are not calculated yet.

CC8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 5% but less than or equal to 10%	Assumptions Metering/ Measurement Constraints	While gathering the specific activity data, a few constraints are encountered which were affect the accuracy of emission calculations. In the calculation phase (due to use of different suppliers and some variable parameters such as; instant calorific values of fossil fuels and purity of raw materials), constant literature data was used about these multipliers in the activity data instead of laboratory data.

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 2	More than 2% but less than or equal to 5%	Other: published emisson factors	In the literature, it can be possible to find several different country specific emission factors which is related to electricity production. Hence, there is an uncertainty, depending on the factor used.

CC8.6

Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

No third party verification or assurance

CC8.6a

Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)

CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emissions Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission

CC8.7

Please indicate the verification/assurance status that applies to your reported Scope 2 emissions

No third party verification or assurance

CC8.7a

Please provide further details of the verification/assurance undertaken for your Scope 2 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)

CC8.8

Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment
Other: Financial values and Scope 1 emissions of	Financial values are verified by third party and published annually. Since there is no apropriate selection choice in CC8.7, we need to explain that, although there is no emission verification in Turkey, Scope 1 emissions of Bulgaria plant are are verified by

Additional data points verified	Comment
Bulgaria plant	a third party according to EU ETS rules and published annually. The report is enclosed in CC 4.1.

CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

Further Information

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2014 - 31 Dec 2014)

CC9.1

Do you have Scope 1 emissions sources in more than one country?

Yes

CC9.1a

Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e
Bulgaria	231613
Turkey	3584439

CC9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By business division

CC9.2a

Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)
Glass production	1959990
Soda and chromium production	1743200
Other	112862

CC9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude

CC9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)

CC9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)

CC9.2e

Please break down your total gross global Scope 1 emissions by legal structure

Legal structure	Scope 1 emissions (metric tonnes CO2e)

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2014 - 31 Dec 2014)

CC10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

CC10.1a

Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted for in CC8.3 (MWh)
Bulgaria	58369	125958	
Turkey	537469	1119960	

CC10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By business division

CC10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2 emissions (metric tonnes CO2e)
Glass production	519401
Soda and chromium production	44326
Other	32111

CC10.2b

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2 emissions (metric tonnes CO2e)

CC10.2c

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2 emissions (metric tonnes CO2e)

CC10.2d

Please break down your total gross global Scope 2 emissions by legal structure

Legal structure	Scope 2 emissions (metric tonnes CO2e)

Further Information

Page: CC11. Energy

CC11.1

What percentage of your total operational spend in the reporting year was on energy?

More than 30% but less than or equal to 35%

CC11.2

Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	MWh
Fuel	14495490
Electricity	1245918
Heat	0

Energy type	MWh
Steam	0
Cooling	0

CC11.3

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Natural gas	14474060
Liquefied petroleum gas (LPG)	15818
Diesel/Gas oil	5612

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the Scope 2 figure reported in CC8.3

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comment
Grid connected low carbon electricity generation owned by company, no instruments created	28427	In Bursa Yenişehir Float Glass Plant, waste heat recovery system produces electricity, it is connected and sold to grid. Waste heat recovery system consists of two boilers of high and low pressure and a steam turbine to produce electricity. In 2014, 28427 MWh of electricity is produced with waste heat recovery system.

Further Information

Page: CC12. Emissions Performance

CC12.1

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

Increased

CC12.1a

Please 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

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities	0.3	Decrease	Decreasing specific energy consumption has been achieved through combination of a number of energy efficiency projects and energy saving actions/measures taken over the time. (All the details are given in Answer 3.3b) Last year 11317 ton CO2 were reduced and total CO2 emissions (scope 1+2) was 4201426 in 2013, therefore %0,3 reduction is achieved.
Divestment			
Acquisitions			
Mergers			
Change in output	5	Increase	Total production rate has increased. One of the main differences is that in 2014, 290,000 tons of annual flat glass production capacity was added in Polatlı, Ankara facility. Increased energy consumptions due to the increase in production rates affected CO2 emissions directly. Total CO2 emissions (scope 1+2) was 4201426 in 2013 and 4411889 in 2014; this refers to 5% increase.
Change in methodology			
Change in boundary			
Change in physical			

Reason	Emissions value (percentage)	Direction of change	Comment
operating conditions			
Unidentified			
Other			

CC12.2

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.0008	metric tonnes CO2e	unit total revenue	9	Decrease	Decrease of intensity factor is a result of increase in revenue and emission reduction due to emission reduction activities.

CC12.3

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
439	metric tonnes CO2e	FTE employee	3	Increase	3% increase of intensity figure is a result of increase in FTE value and CO2 emissions compared to 2013.

CC12.4

Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.48	metric tonnes CO2e	Other: Total gross production	14	Decrease	This calculation is based on total CO2 emissions per gross production amount in tonnes (excluding electricity production). This value was 0,56 in 2013 whereas this is 0,48 in 2014. Decrease in intensity factor is a result emission reduction activities in 2014.

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

Yes

CC13.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
European Union ETS	Wed 01 Jan 2014 - Wed 31 Dec 2014	162980	0	231410	Facilities we own and operate

CC13.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

Trakya Glass Bulgaria EAD (TGB), which is the subsidiary of Şişecam's Flat Glass Group Trakya Cam in Bulgaria, has been participating in EU-ETS. Under the 'cap and trade' principle, a certain number of allowances (EUA) have been allocated to TGB, since 2007.
Beginning from 2008, the balance of the emission-permit level has being followed continuously by Şişecam finance and environmental experts and we have been kept in touch with consultant agencies to evaluate the most suitable trading options/risks for us and to fulfill the obligations from the Directive 2003/87/EC of The European Parliament and of The Council and the Kyoto Protocol. For the new period; financial evaluations for trading options will be continued in collaboration with carbon trade agencies.

CC13.2

Has your organization originated any project-based carbon credits or purchased any within the reporting period?

No

CC13.2a

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Relevant, not yet calculated				
Capital goods	Not relevant, explanation provided		Not considered as a relevant category in terms of emissions due to its negligible proportion among Şişecam activities.		
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Not relevant, explanation provided		All the fuel and energy related activities were reported under Scope 1 and Scope 2.		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Upstream transportation and distribution	Relevant, not yet calculated				
Waste generated in operations	Not evaluated				
Business travel	Relevant, not yet calculated				
Employee commuting	Relevant, not yet calculated				
Upstream leased assets	Not evaluated				
Downstream transportation and distribution	Relevant, not yet calculated				
Processing of sold products	Not relevant, explanation provided		The vast majority of Şişecam products are ready to be consumed or distributed. Only a part of glass products (mostly flat glass and a few part of container glass) are processed by small and large in secondary market. However, reliable figures are difficult to obtain due to wide range of large and small workshops.		
Use of sold products	Not relevant, explanation provided		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	Not evaluated				
Downstream leased assets	Not relevant, explanation provided		Not considered as a relevant category in terms of emissions due to its negligible proportion among Şişecam activities.		
Franchises	Not evaluated				
Investments	Not relevant, explanation		All the investments are operationally controlled by Şişecam itself and defined in organizational boundaries. Therefore; scope 1 and scope 2		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
	provided		emissions of all the active (operational) Şişecam investments are reported under Scope 1 and Scope 2.		
Other (upstream)	Not evaluated				
Other (downstream)	Not evaluated				

CC14.2

Please indicate the verification/assurance status that applies to your reported Scope 3 emissions

No emissions data provided

CC14.2a

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 3 emissions verified (%)

CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

No, we don't have any emissions data

CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment

CC14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

Yes, our customers
Yes, other partners in the value chain

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

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

CC14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% of total spend	Comment

CC14.4c

If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details

CC14.4d

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Dilek Bolcan	Environmental Management Manager	Environment/Sustainability manager

Further Information

CDP 2015 Climate Change 2015 Information Request