

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, 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

Thu 01 Jan 2015 - Fri 01 Jan 2016

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	In 2015, risk management function, which has been conducted centrally for many years is integrated to "MicroSCOpe" software system. This system provides systematic info collection and reporting. Also, "MicroSCOpe" provided

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
				the technological support to realize the focus on risks and opportunities about climate change.

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 assessed 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?

In 2015, risk management function, which has been conducted centrally for many years is integrated to “MicroSCOpe” software system. This system provides systematic info collection and reporting. Also, “MicroSCOpe” provided the technological support to realize the focus on risks and opportunities about climate change.

Risk Management Department identifies risks and opportunities that may be exposed in the defined period and prioritize them. 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 Chief of Corporate Development and Sustainability 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 managed since 2012.

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) Examples for influence on business strategy
- The integration of carbon and energy management facts into corporate strategy.

- Implementation of the online energy management software for the monitoring of energy performance of production plants in the Group.
- Waste heat recovery installations that converts the released thermal energy to electrical energy
- Preliminary and comprehensive energy audits by a certified consultant for all Şişecam companies
- Usage of energy efficient equipment (electric motors, pumps, fans and other production and auxiliary equipment),
- Adaptation of ISO 14001 Environmental Management System and ISO 50001 Energy Management System to all Şişecam Companies
- Integration of Environmental and Energy Policy centrally
- Sustainability reports for the operations in Turkey of Şişecam Group, Trakya Cam, Anadolu Cam, Paşabahçe and Soda Sanayii A.Ş.
- Establishment of Şişecam Sustainability Committee in order to prioritize and realize sustainability related issues

3) 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.

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

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

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

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

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?

No, and we currently don't anticipate doing so in the next 2 years

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	Glass is 100% infinitely recyclable in closed loop system, each time a bottle or jar is properly collected and recycled and made into new containers, energy and raw materials are saved and less CO2 is emitted. In general terms, using 10 % recycled glass usage results in an energy saving of 2 - 3 % in the melting process and each tonne of cullet used saves 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 sponsors the “curb-side collection” of glass containers and recycle them. Şişecam Glass Packaging 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. Şişecam Glass Packaging 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. Şişecam provided TRY14 million of support since 2011 to “Glass and Glass Again”, the most comprehensive sustainability and recycling project in Turkey. By the end of 2015 more than 200,000 students were trained, 12900 bottle banks were donated with the project. With glass recycling CO2 emissions of 208.000 cars are prevented by the end of 2015. Achieved energy saving corresponds to heating and hot water of 24.000 dwellings.

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
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 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. Patent application started for the output of this project.	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).
Cap and trade	Support	Şişecam follows up the project on Preparation of Carbon Markets governed by Ministry of Environment and Urbanism and attends workshops related to this project. The aim of the project is to integrate emission trading system to local regulations.	Şişecam, as one of the main players of the sector provides feedback about emissions, quotas and appropriate emission control systems in the glass sector.

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 the climate change issue as "Turkish Industry Representative" and it intends to follow global and national regulations on climate change, train and support the Turkish Industry and contribute national strategies in the industrial perspective. . ICI considers environment and energy related issues in a separate department. Commissions perform their studies with the coordination of this department.	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 efficiency in new buildings and energy efficient renovation of existing building stock is crucial for meeting our ambitious energy and climate policy goals. IMSAD is the leader non-governmental organization of Turkish construction sector. IMSAD committees works on energy efficiency of buildings, environmental friendly construction materials, health and safety, window-door-glass, sustainability, market improvement, construction materials regulation etc.	Şişecam Flat Glass 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.Moreover, Şişecam Flat Glass, sponsored 7th International Quality In Construction Summit which was sponsored by IMSAD. The summit with the thema of "Changing World Changing Material" is organized on 26th November 2015 .
Glass Alliance Europe, FEVE, Glass for Europe, APFE	Consistent	Glass Alliance Europe's work focuses on EU environment policy, marked in recent years by the EU's Climate Change Policy. The primary mission of Glass Alliance Europe is to enhance the exchange of information between its members and to coordinate views on common environmental and regulatory challenges, which affect the glass making business. To fulfil this mission, Glass Alliance Europe sometimes issues reports, statements and press releases from the European glass industries on different topics.	As a member of these trade associations, Şişecam follows the EU Regulations and related applications related to climate change closely. In this way Şişecam has the chance of transferring EU glass market's experience into national implementations.

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

No

CC2.3e

Please provide details of the other engagement activities that you undertake

CC2.3f

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

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 activities periodically and determine action plans to get the solutions for the related problems if there is any.

CC2.3g

Please explain why you do not engage with policy makers

Further Information

Page: CC3. Targets and Initiatives

CC3.1

Did you have an emissions reduction or renewable energy consumption or production 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 covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
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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 covered by target	Target year	Is this a science-based target?	Comment
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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
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CC3.1d

Please provide details of your renewable energy consumption and/or production target

ID	Energy types covered by target	Base year	Base year energy for energy type covered (MWh)	% renewable energy in base year	Target year	% renewable energy in target year	Comment
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CC3.1e

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

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
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CC3.1f

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

- (i) Şişecam operates in energy-intensive sector thus targets on emissions reduction or renewable energy consumption or production requires much more detailed and systematic analysis. Therefore; in order to identify a realistic target, related studies and projects are planned and going on.
- (ii) 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 since 2012. 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. Thus, with this system setting up energy and carbon reduction targets will be more practical. Therefore; no emission target has been identified for this reporting period since mentioned projects has not been completed yet.
- (ii) In relation with plans; 20% increase in CO2 emissions is expected.
- (iv) There are plans for the upcoming years to set a target for specific energy consumption and carbon emission values.

CC3.2

Do you classify any of your existing goods and/or services as low carbon products or do they enable a third party to avoid GHG emissions?

No

CC3.2a

Please provide details of your products and/or services that you classify as low carbon products or that enable a third party to avoid GHG emissions

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
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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*	14	12921
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 efficiency improvement and repair at Anadolu Cam Mersin Plant	3098	Scope 1	Voluntary	1286250	14534800	4-10 years	11-15 years	
Energy efficiency: Processes	Avoidance of pressurised air sytem leakage at Anadolu Cam Mersin Plant	391	Scope 2 (location-based)	Voluntary	172770	0	<1 year	<1 year	
Energy efficiency: Processes	Replacement of reciprocating compressors with higher capacity compressor at Anadolu Cam Mersin Plant	430	Scope 2 (location-based)	Voluntary	188537	261000	1-3 years	11-15 years	
Energy efficiency: Processes	Replacement of mercury vapor lighting fittings with LED lighting fittings in production area of Anadolu Cam Yenişehir Plant	737	Scope 2 (location-based)	Voluntary	287411	225155	1-3 years	6-10 years	
Energy efficiency: Building services	Transition to natural gas in social facility of Trakya Cam Trakya Plant	1522	Scope 1	Voluntary	589339	475000	<1 year	11-15 years	
Energy efficiency: Processes	Transfer of O2 enriched air to TR2 combustion air from N2 facility at Trakya Cam Trakya Plant	1028	Scope 1	Voluntary	397982	120000	<1 year	16-20 years	
Energy efficiency: Processes	Utilization of waste heat in TR2 cooling line at Trakya Cam Trakya Plant	656	Scope 1	Voluntary	177695	100000	<1 year	16-20 years	
Energy efficiency: Processes	Avoidance of pressurised air leakage at Trakya Cam Automotive Plant	283	Scope 2 (location-based)	Voluntary	134447	8809	<1 year	1-2 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
Energy efficiency: Processes	Vacum system replacement in furnaces of Trakya Cam Automotive Plant	768	Scope 2 (location-based)	Voluntary	366400	116198	4-10 years	11-15 years	
Energy efficiency: Processes	Exchange to high efficiency electrical motors at Kromsan Plant of Soda Sanayii A.Ş.	669	Scope 2 (location-based)	Voluntary	348640	584983	1-3 years	11-15 years	
Energy efficiency: Processes	Replacement of circulation pumps at Kromsan Plant of Soda Sanayii A.Ş.	227	Scope 2 (location-based)	Voluntary	118016	395000	1-3 years	16-20 years	
Energy efficiency: Processes	Inverter installation to furnace circulation fans at Cam Elyaf Plant.	189	Scope 2 (location-based)	Voluntary	84914	24750	<1 year	6-10 years	
Energy efficiency: Processes	Avoidance of air leakage in fans at Trakya Glass Bulgaria EAD Tableware Plant	293	Scope 2 (location-based)	Voluntary	135900	0	<1 year	1-2 years	
Energy efficiency: Processes	Furnace A and B efficiency improvement at Trakya Glass Bulgaria EAD Tableware Plant	2631	Scope 1	Voluntary	1013490	0	<1 year	1-2 years	

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. 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 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 processes. Therefore energy intensive sectors are face with strict constraints. In addition to existing energy efficiency regulations and national energy policy, 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	Comment
In other regulatory filings	Complete	page 10	https://www.cdp.net/sites/2016/42/21142/Climate Change 2016/Shared Documents/Attachments/CC4.1/Bulgaria_CO2 annual report.pdf	
In voluntary communications	Under way - previous year attached	page 31-44	https://www.cdp.net/sites/2016/42/21142/Climate Change 2016/Shared Documents/Attachments/CC4.1/Şişecam Sustainability Report 2014.pdf	http://www.sisecam.com.tr/sites/catalogs/en/Documents/sustainability/EN_Şişecam%20Sustainability%20Report%202014.pdf
In other regulatory filings	Complete	page 58-62	https://www.cdp.net/sites/2016/42/21142/Climate Change 2016/Shared Documents/Attachments/CC4.1/Sisecam-FR-2015_WEB_LR.pdf	http://www.sisecam.com.tr/sites/catalogs/en/Investor%20Relations/Presentations%20and%20Bulletins/Annual%20Reports/Sisecam-FR-2015_WEB_LR.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	A new regulatory framework on 'Monitoring of GHGs Emissions' is adopted in Turkey. The Regulation aims to set the principles and procedures related to monitoring, reporting and verification of GHGs resulting from activities listed in Annex I of the by-law. For Şişecam and related plants, the first year for monitoring is 2015 and the	Increased operational cost	1 to 3 years	Direct	Virtually certain	Low-medium	Regulation on Monitoring, Reporting and Verification of greenhouse gas emissions came into force in 2015. It will allow government to track industrial greenhouse gas emissions with rules similar to European Union's Emissions Trading Scheme. This regulation will bring some extra responsibilities like reporting and extra cost for verification.	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 IPCC-2006 and	No additional cost associated with these actions only for this year. Greenhouse gas emissions monitoring plan has been prepared by Şişecam factory representatives. Verification phase has not started yet. In 2016 and the upcoming years, plants will pay for the verification step.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	reporting for that year will be in 2016.							ISO 14064 GHG Standard. In this context, a project related to greenhouse gas monitoring plans was performed. According to the regulation, related plants has prepared greenhouse gas monitoring plans for 2015, got approval from the Ministry of Environment and Urbanizm. Management actions related to this risk are being implemented.	
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 sector for	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	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	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
	<p>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, Şişecam plants has to manage comprehensive energy efficiency audits.</p>						<p>fuel/energy usage will affect operations directly and will limit productivity. The magnitudes of these risks are still not clear.</p>	<p>quantities are followed and reported. Continuous improvement activities related to energy saving became a standard part of main operations of Şişecam due to its high emission and cost effect. In order to increase the energy efficiency of Şişecam facilities, a number of energy saving actions have been taken. In addition to these routine actions, ISO 50001- Energy Management Systems are applied . One of the projects concerns to energy audits. Preliminary and comprehensive energy audits by a certified</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								consultant are implemented. Management actions related to this risk are being implemented.	
International agreements	Turkey has participated in United Nations Climate Change Conference (COP21) that took place in Paris and Turkish government stated to pledge a 21% cut in projected increases to its GHG emissions within the next 15 years. Turkey has announced many strategies and action plans to combat climate change which will directly influence business sectors. This will bring extra responsibilities for Şişecam.	Increased operational cost	>6 years	Direct	More likely than not	Medium-high	This period will result in substantial future capital costs, loss of revenue and regulated carbon quotas.. If the sectors can not reach the target, they should purchase carbon credits which will directly result in increase of expenses.	For instance, as the most important sector representative, Şişecam had a significant role in defining Turkey's industrial energy saving targets for 2011-2023, during the preparation of the National Climate Change Action Plan. Moreover, Şişecam follows up the project on Preparation of Carbon Markets governed by Ministry of Environment and Urbanism and attends workshops related to this project. Management actions related to	Investments and costs for energy efficiency projects

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								this risk are being implemented. 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 the upcoming sections.	
Other regulatory drivers	In December 2014, a new regulatory framework on 'Online Monitoring of Continuous Emission Measurement Systems' is adopted in Turkey. The Regulation aims to set the principles and procedures related to collection, storage and	Increased operational cost	>6 years	Direct	Virtually certain	Low-medium	This regulation on 'Online Monitoring of Continuous Emission Measurement Systems' will allow Ministry to track industrial emissions online. This regulation brought some extra responsibilities like purchasing and maintenance of the software system.	For instance Şişecam evaluated the increase in operational cost and integrated this into the budget. Required actions related to this risk are implemented. For instance Şişecam evaluated the increase in operational cost and integrated this into the budget.	The software system was purchased. Additional cost associated with the maintenance of the software is planned within budget.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	transfer of data from the continuous emission measurement systems. Şişecam's glass manufacturing factories that has NOx continuous measurement systems has set up the software to send the data to the ministry. This is completed at the end of 2015.								

CC5.1b

Please describe your inherent risks that are driven by changes 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	Increase of GHG concentrations	Reduction/disruption in production capacity	>6 years	Direct	About as likely as not	Low	Floods can damage operations and can pause the production.	The potential impact and timeframe of	Insurance fee for the facilities are

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
drivers	in the atmosphere leads to impacts on climate change and global warming. Globally, much more extreme and variable weather conditions are expected in the future. Floods, sudden temperature rises and decreases forms a risk for our plants and floods can damage the plants. Extreme rain and storms can hinder the supply of export imported materials and equipment for Şişecam plants.						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 production. These situations which may have a significant adverse impact on the company's financial results are considered in risk management concept.	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 required actions related to this risk and emergency action plans are implemented. For instance in order to handle similar risks in the long term; vital equipment and raw materials are stocked. Besides, the factory lay-outs and infrastructures are designed due to the related risks. Related projects are being implemented.	integrated in the budget.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								Also, during deciding new investments facility locations are evaluated according to these 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 an important issue in managing corporate reputation. Today, it is critical that companies safeguard their reputations	Wider social disadvantages	>6 years	Indirect (Client)	About as likely as not	Low	There is no tangible financial impacts due to reputation loss due to climate change effect and emissions. Corporate reliability relies on regulations and may negatively	Şişecam recognize that corporate environmental behavior highly affects the corporate reputation. Therefore related studies and projects are being implemented. Corporate Development and Sustainability Department focuses on projects related to corporate development, energy, environment. In order to meet expectations of stakeholders, Sustainability Reports for the operations in Turkey of	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
	through effective communications with all their stakeholders about their environmental performance on climate change issue. This risk may impact Şişecam's reputation also.						affect customer behaviour. This may limit company's role on future policy and strategies.	Şişecam Group, Trakya Cam, Anadolu Cam, Paşabahçe and Soda Sanayii A.Ş are published. 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. Existing buildings should get Energy Performance	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 windows. Increase in demand for Şişecam's energy efficient products such as low-e, tenteseol titanium, 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 (IMSAD) and Association of Thermal Insulation, Waterproofing,	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
	Certificate till 2017. This creates an opportunity for Şişecam's energy efficient products.							Sound Insulation and Fireproofing Material Producers, Suppliers and Applicators (IZODER). Group also took part in several organizations in 2015. Collaboration with Policy Makers: As the most important sector representative, Şişecam 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	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								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 principles and procedures related to evaluate and certify green buildings and green sites	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. This will directly influence the demand for high value added products like low e, solar	Şişecam implements lobbying activities and trainings in order to emphasize the importance of design and glass selection in the construction sector. Moreover, Şişecam Flat Glas is working on its Environmental Product Declaration (EPD) process,	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
	that use natural resources and energy efficiently. This creates an opportunity for Şişecam's energy efficient products.						control, thermal insulation and solar control glasses.	which is the most comprehensive eco-labelling scheme.	
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 electrical	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. Şişecam Flat Glass 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 main component of	Sisecam implements related lobbying activities, studies and projects. In order to introduce the contribution of its products to economy, Şişecam Flat Glass is an active member of Turkish Photovoltaic Industry Association (GENSED). Group also took part in several organizations in 2015.	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
	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. This creates an opportunity for Şişecam's energy efficient products.						many large-scale wind turbine blades because of its durable and lightweight characteristics.		

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	2015 has been another year of unparalleled extremes and 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. In Turkey approximately 30% of energy is consumed in buildings. Thus, buildings can make a major contribution to tackling climate change and energy use. Şişecam has successfully reacted to environmental issues by offering a variety of applications to make buildings more energy	Increased demand for existing products/services	>6 years	Direct	Likely	Medium-high	Regulation on Energy Performance in Buildings came 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.	Sisecam implements related activities studies and 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	The investment of R&D studies are implemented in the budget planning.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	efficient and environmental friendly. Today's glass can be practically custom-made to fit into any environmental condition and offer specific appearances and performance and energy efficiency.							Applicators (IZODER). Group also took part in several organizations in 2015. Collaboration with Policy Makers: As the most important sector representative, Şişecam 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.	

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, Şişecam's 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	Company implements necessary R&D and 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
								<p>new products, R&D studies and marketing of products are going on. In order to show its awareness; Şişecam participate in Carbon Disclosure Project-Turkey.. Training programs for key players in the market and customers are implemented by social responsibility projects such as Glass and Glass Againt. Sustainability Report is an other example to manage this opportunity. Sustainability reports are published for the operations in Turkey of Şişecam Group, Trakya Cam, Anadolu Cam, Paşabahçe and</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								Soda Sanayii A.Ş.	

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	Wed 01 Jan 2014 - Wed 31 Dec 2014	3816052
Scope 2 (location-based)	Wed 01 Jan 2014 - Wed 31 Dec 2014	595838
Scope 2 (market-based)		

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 Fifth Assessment Report (AR5 - 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	IPCC Guidelines
Diesel/Gas oil	74.1	Other: metric tonnes CO2 per TJ	IPCC Guidelines
Liquefied petroleum gas (LPG)	63.1	Other: metric tonnes CO2 per TJ	IPCC Guidelines
Other: CaCO3	440	Other: kg CO2 per metric tonnes material	IPCC Guidelines

Fuel/Material/Energy	Emission Factor	Unit	Reference
Other: MgCO3	522	Other: kg CO2 per metric tonnes material	IPCC Guidelines
Other: Na2CO3	415	Other: kg CO2 per metric tonnes material	IPCC Guidelines
Other: CaMg(CO3)2	477	Other: kg CO2 per metric tonnes material	IPCC Guidelines
Electricity	479.93	kg CO2e 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 Electricity in Bulgaria

Further Information

Page: CC8. Emissions Data - (1 Jan 2015 - 1 Jan 2016)

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

3794333

CC8.3

Does your company have any operations in markets providing product or supplier specific data in the form of contractual instruments?

Don't know

CC8.3a

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

Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
581528		

CC8.4

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

Yes

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 location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
Headquarter buildings	Emissions are relevant and calculated, but not disclosed	Emissions are relevant and calculated, but not disclosed	No emissions from this source	Emissions from operational buildings are calculated however they are relatively small when compared to the emissions of the plants.

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 2 (location-based)	More than 2% but less than or equal to 5%	Metering/ Measurement Constraints 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.
Scope 2 (market-based)			

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

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
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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
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CC8.7

Please indicate the verification/assurance status that applies to at least one of your reported Scope 2 emissions figures

No third party verification or assurance

CC8.7a

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

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
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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
No additional data verified	Financial values are verified by third party and published annually. There is no emission verification for our plants in Turkey, Scope 1 emissions of Bulgaria plant are verified by 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 2015 - 1 Jan 2016)

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	317599
Turkey	3476734

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	1953245
Soda and chromium production	1731250
Other	109838

CC9.2b

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

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
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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)

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2015 - 1 Jan 2016)

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, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Bulgaria	72051		155482	
Turkey	509477		1235080	

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, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)
Glass production	514938	
Soda and chromium production	38015	

Business division	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)
Other	28575	

CC10.2b

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

Facility	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)

CC10.2c

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

Activity	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)

Further Information

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 heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	Energy purchased and consumed (MWh)
Heat	0
Steam	0
Cooling	0

CC11.3

Please state how much fuel in MWh your organization has consumed (for energy purposes) during the reporting year

13372302

CC11.3a

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

Fuels	MWh
Natural gas	13339737
Liquefied petroleum gas (LPG)	12361
Diesel/Gas oil	19240
Anthracite	964

CC11.4

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

Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Comment
Grid-connected electricity generation owned, operated or hosted by the company, where electricity attribute certificates do not exist or are not required for a usage claim	27903	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 2015, 27903 MWh of electricity is produced with waste heat recovery system.

CC11.5

Please report how much electricity you produce in MWh, and how much electricity you consume in MWh

Total electricity consumed (MWh)	Consumed electricity that is purchased (MWh)	Total electricity produced (MWh)	Total renewable electricity produced (MWh)	Consumed renewable electricity that is produced by company (MWh)	Comment
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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?

Decreased

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	Please explain and include calculation
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) In 2015 12921 ton CO2 emission were reduced by energy efficiency projects and total CO2 emissions (scope 1+2) was 4411890 in 2014, therefore %0,3 reduction is achieved.
Divestment		No change	
Acquisitions		No change	

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Mergers		No change	
Change in output	0.7	Decrease	One of the main differences is that in 2015, total production rate has decreased. In 2015 there was a decrease of 23108 ton CO2 emissions. In 2014 total CO2 emissions (scope 1+2) was 4411890 in 2014, therefore %0,7 reduction is achieved.
Change in methodology		No change	
Change in boundary		No change	
Change in physical operating conditions		No change	
Unidentified		No change	
Other		No change	

CC12.1b

Is your emissions performance calculations in CC12.1 and CC12.1a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

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 (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.00075	metric tonnes CO2e	5863000000	Location-based	6	Decrease	Decrease of intensity figure is a result of increase in total revenue compared to 2014 and emission reduction activities performed in 2015.

CC12.3

Please provide any additional intensity (normalized) metrics that are appropriate to your business operations

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
424	metric tonnes CO2e	full time equivalent (FTE) employee	10331	Location-based	4	Decrease	Decrease of intensity figure is a result of increase in FTE value compared to 2014 and emission reduction activities performed in 2015.

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	Thu 01 Jan 2015 - Thu 31 Dec 2015	201431	239735	315270	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 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 been 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	Relevant, not				

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
services	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.
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	Relevant, not yet calculated				
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. 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				

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
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 provided				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)					
Other (downstream)					

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

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 3 emissions verified (%)
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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
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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 suppliers

Yes, other partners in the value chain

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagement 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 Specific Customers, Sustainability Reports and IFC/EBRD Reports (ii) Strategy: Group is prioritizing the engagement activities based on customer demands. Measures: Şişecam commits to supply the required information, as reliable and accurate.

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 (direct and indirect)	Comment
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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
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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

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 2016 Climate Change 2016 Information Request