



PRESERVE EMPOWER PROGRESS

TÜRKİYE ŞİŞE VE CAM FABRİKALARI A.Ş. SUSTAINABILITY REPORT 2017

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About the Report

Türkiye Şişe ve Cam Fabrikaları A.Ş. (Şişecam) prepared this report on the performance of its sustainability strategy for the period of January 1, 2017 - December 31, 2017 and shares it with its stakeholders. This report was prepared in accordance with the GRI standards: Core option.

To be consistent with the consolidated data presented in Şişecam's financial reports, the economic indicators in the report cover all legal enterprises of the company in Turkey and abroad, while all the other indicators relating to environmental and social impacts cover the operations in Turkey.



Your opinion counts!

To share your comments and suggestions on the report please send an e-mail to kzaim@sisecam.com

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Message from the Chairman of Board of Directors

Dear Stakeholders,

With 82 years of experience, Sisecam Group, one of Turkey's oldest industrial company, proud to be the only global player operating in all the major areas of glass production in the world.

Our founding values and sustainability approaches undoubtedly play an important role in the flat glass, glassware, glass packaging and chemicals sectors achievements while operating in 13 countries and trading with 150 countries with the contribution of more than 21 thousands employees.

We do recognize that only through a business model that add sustainable value for all can ensure an economic, environmental and social development. In this context, we are very pleased to see that the United Nations 17 Sustainable Development Goals and related targets, including combating climate change, decent work and economic growth, responsible consumption and production, affordable and clean energy, as set out in the 2030 Sustainable Development Agenda of the United Nations, have been internalized by many private and public organizations. Through our PRESERVE, EMPOWER and PROGRESS sustainability approaches we committed to contribute to the achievement of the Sustainable Development Goals.

Our sustainability approach empowers our employees, stakeholders by advocating and engaging in practices that encourage diversity and inclusion, progresses through climate neutral - 360 o circular economic model, preserves natural resources and our institutional heritage for resilient and sustainable generations to come.

On our sustainability journey, we continue to pioneer and be the sectoral leader through our value added products, environmental performances, energy efficiency solutions, quality standards, digital processes, research & development while adopting to local fabrics. Being a company that derives strength from our traditions and support each other; adopts a fair and transparent management approach; thrives and develops one another; cares for our environment and respect differences; as our 82-year-old heritage, we will continue to advocate sustainable practices in 2018 and beyond to improve our communities and stakeholders' social, economic and environmental welfare.

I would like to extend my thanks and deep appreciation to all of our employees and stakeholders' key contribution during our joint and successful endeavor.



Adnan Bali
Chairman of the Board of Directors

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Message from the Chief Executive Officer

Dear Stakeholders,

As a global, reputable, financially stable company with a transparent understanding of governance, Sisecam adopted the United Nations (UN) Sustainable Development Goals (SDG) and ratified UN Global Compact. It is my great pleasure to share with you our 2017 Sustainability Report that is not only aligned with the UN Sustainable Development Goals but also with the UN Global Compact's and Global Report Initiative (GRI) Standards reporting requirements.

The key global trends, which shapes our business are climate change, resource scarcity, digitalization, shift of economic powers and technological innovation. While striving to be a fair and transparent global player, we mainstream sustainability principles in all of our fields of operations to bring an equitable, viable and bearable future for generations to come.

Our sustainability pathway is built on the PRESERVE, EMPOWER and PROGRESS sustainability pillars through which we empower our employees and stakeholders by advocating and engaging in practices that encourage diversity and inclusion; progress through climate neutral 360 o circular economic model; and preserve natural resources that we rely on and our institutional heritage for resilient and sustainable generations to come.

With our sustainability approach, we support 11 out of 17 Global Goals of the 2030 United Nations Sustainable Development Agenda and in this context; the 2017 performances are highlighted below.

Through our PROGRESS approach we contributed to SDG 12 (Responsible Consumption and Production) while creating social and economic value in all geographies where we operate. In 2017, our Group produced 4.8 million tons of glass, 2.3 million tons of soda and 4.2 million tons of industrial raw materials. We increased our consolidated net sales by 32% compared to previous year to TRY 11.3 billion. The share of international sales in total revenues went up from 55% to 60% in one year. Our Group invested a total of TRY 1 billion in 2017. We strengthened our position in existing markets, pursued opportunities in alternative markets, worked for new initiatives in areas with high potential and undersigned new investments during the year. Şişecam Group conducts its business operations in parallel with a sustainable growth strategy focused on creating value. The Group crowned its efforts with a robust financial performance, recording TRY 3.1 billion in nominal EBITDA with an EBITDA margin of 27.6%, up 2.9 points in 2017.

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The key global trends, which shapes our business are climate change, resource scarcity, digitalization, shift of economic powers and technological innovation.

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Our contribution to SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action), was through 397 thousands GJ energy saving, that corresponds to about 29 thousand tons carbon (CO_2 equivalent) through energy efficiency solutions such as: prevention of leakages, planning maintenance, improvement of burning systems, replacement of energy inefficient equipment's, installation of waste heat recovery systems and the installation of a 6.2 MW Solar Energy Plant on the roof of the Sisecam Flat Glass Mersin Plan of a 22 million TL value investment. Additionally, "Waste Heat Energy Power Generation Project" of Şişecam Flatglass Mersin Plant received the "ICCI Energy Prize" and the prize of "Energy Intensive Industries and Energy Efficiency Conference" organized by EnerCON-2017-Berlin.

Sisecam's Research and Technological Development Center is awarded by Ministry of Industry and Technology with the First Prize in the Intellectual Property Competence among 144 R&D Centers for their 2017 performance. Additionally, Sisecam continues to pave the way to implement the "Smart, Digital, Productivity" and "BT 2.0" strategy across all the operations. Furthermore, Sisecam Groups' web sites also received several awards based on the web site's updates. All these activities are key contributors to the SDG 9 (Industry, Innovation and Infrastructure).

Our commitment to PRESERVE natural resources, the "Glass and Glass Again Project" ongoing for 7 years, in 2017 ensured that 172 thousand tons of glass was prevented from going into the waste, that is equivalent of 7,200 households' annual energy savings, that adds value to SDG 12 (Responsible Consumption and Production)'s achievement.

We EMPOWER our employees, local communities, vulnerable groups and supply chain by establishment of Yenisehir Vocation and Technical Anatolian High school in Bursa of which the partnership protocol was signed between Sisecam, Bursa Governance, Regional National Education Directorate and Yenisehir Municipality. By ratifying UN Global Compact, we also committed to implement its 10 principles. These activities are also key contributors to SDG 10 (Reduced Inequalities) and SDG 17 (Partnerships for the Goals).

As a global player and international enabler, we empower our employees, local communities, vulnerable groups and supply chains to become an active advocate and solution partner to achieve jointly 2030 United Nations Sustainability Global Agenda through our innovative solutions, which is in line with our corporate sustainability strategy and targets.

I would like to thank all of our employees and stakeholders for their continuous support for our achievements and our efforts to become a full-fledged sustainable global company.

Prof. Dr. Ahmet Kırman
Vice Chairman and CEO

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About Şişecam

As one of the oldest established industrial institutions in Turkey with a history going back 82 years, Şişecam operates in the fields of flat glass, glassware, glass packages and chemicals at a global level.

Şişecam is the only player in the world operating in all essential fields of glass and maintains its production operations in 13 countries with over 21,000 employees, conducting more than half of its sales overseas, and exporting products to more than 150 countries across the world.

VISION

While striving to be among the top leading companies in all of its fields of operations, Şişecam aims to be a global company, teaming up with business partners for innovative solutions to differentiate itself with its highend technologies and global brands with utmost respect to people and environment

MISSION

To be a company that adds value to life through its highquality products offering comfort and that respects people, environment and the law

ŞİŞECAM'S VALUES



We derive strength from our traditions and support each other



We thrive and develop together



We display fair and transparent management approach



We care for our environment



We respect differences

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ŞİŞECAM GROUP



ŞİŞECAM FLAT GLASS

Şişecam operates in the flat glass industry and conducts its operations under four main lines of business: architectural glass, automotive glass and encapsulated glass, solar glass and home appliance glass. With an annual production capacity of **2.8** million tons, the Group ranks **5**th in the world and **1**st in Europe within its industry.



ŞİŞECAM CHEMICALS

Operating in the fields of soda, chromium chemicals, glass fiber, industrial raw materials, vitamin K3 derivatives and sodium metabisulfite, Şişecam Chemicals ranks **4**th in Europe and **10**th in the world for soda production. The Şişecam Chemicals business line is to meet its own energy needs thanks to the energy generation center within the company.



ŞİŞECAM AUTOMOTIVE

As one of Şişecam Flat Glass' main business line, Şişecam Automotive operates in the automotive glass and encapsulated glass categories at a global level. Producing **10.3** million m² of automotive glass per year in four countries, Şişecam Automotive comprises of **34**% of the sales within Şişecam Flat Glass.



ŞİŞECAM GLASS PACKAGING

Şişecam Glass Packaging is the largest glass packaging manufacturer in Turkey and 5th largest in the world and Europe with its production capacity of **2.3** million ton per year. This business line produces glass packaging in various volumes and color designs for the food, beverage, pharmacy and cosmetic market sectors.



ŞİŞECAM GLASSWARE

Established in 1935, Paşabahçe is responsible for production, design and marketing operations for three different market segments including household, catering and industry in the fields of automatic and manually produced glassware, soda, crystalline and heat-resistant pyrex, full lead crystal glassware production, cardboard packaging production and retailing. Due to Paşabahçe's history and production capacity, Paşabahçe is currently the **3**rd largest glassware company in the world and the **2**nd largest in Europe.

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ŞİŞECAM GROUP PRODUCTION PLANTS

TURKEY

Şişecam Flat Glass

Trakya Cam San. ve Tic. A..Ş.

Trakya Factory - Kırklareli

Mersin Factory

Trakya Yenişehir Cam San. A.Ş.

Yenişehir Factory - Bursa

Trakya Polatlı Cam San. A.Ş.

Polatlı Factory - Ankara

Şişecam Otomotiv A.Ş.

Otomotiv Camları Factory - Kırklareli

Şişecam Glassware

Paşabahçe Cam San. ve Tic. A.Ş.

Kırklareli Factory

Eskişehir Factory

Denizli Cam San. ve Tic. A.Ş.

Denizli Factory

Camiş Ambalaj Sanayii A.Ş.

Tuzla Factory - İstanbul

Şişecam Glass Packaging

Anadolu Cam San. A.Ş.

Mersin Factory - Mersin

Yenişehir Factory - Bursa

Eskişehir Factory - Eskişehir

Şişecam Soda Sanayii A.Ş.

Soda San. A.Ş.

Soda Factory-Mersin

Kromsan Chromium Compound Factory - Mersin

Camiș Madencilik A.Ş.

Operation Provinces:

Aydın, Balıkesir, Bilecik, İstanbul, Karabük, Kırklareli, Mersin

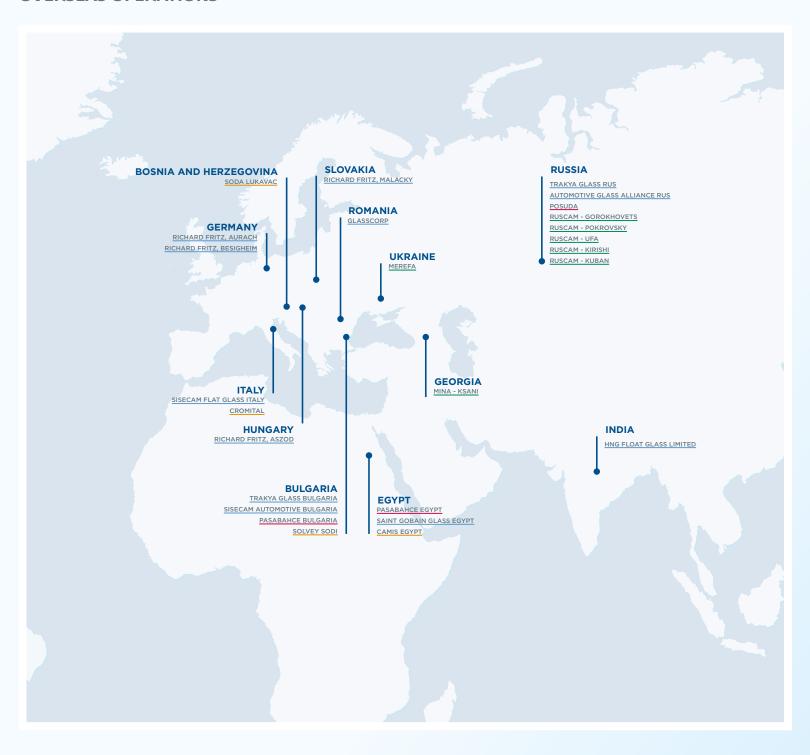
Cam Elyaf San. A.Ş.

Gebze Factory - Kocaeli

Oxyvit Kimya San. ve Tic. A.Ş.

Mersin

OVERSEAS OPERATIONS



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2017 Performance



Sales to **150** countries



1.8 Billion US Dollars in International Sales



Employment for **21,327** People



13 Countries



42 Production Factories



4.8 Million Tons of Glass Production



2.3 Million Tons of Soda Production



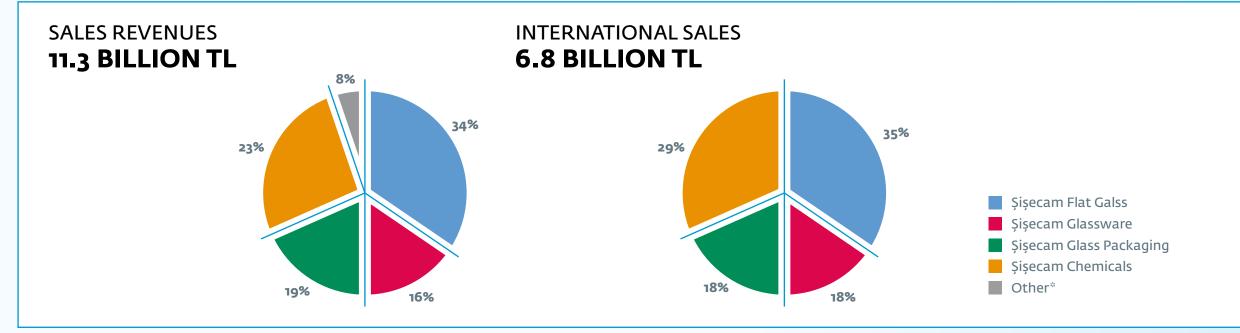
4.2 Million Tons of Industrial Raw Material Production



Şişecam Corporate
Governance Rating of **9.48**(December 15, 2017)



Trading on the Istanbul Stock
Exchange 2017-October 2018
Sustainability Index



* From Şişecam's energy trading

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Strategic Sustainability Approach

Sisecam aims to be an international enabler by delivering long-term value for future generations with its Sustainability Strategy, whilst deriving its strength from the company's historical heritage and ability to excel beyond traditional conventions.

Reaching a sales volume of 11.3 billion TL in flat glass, glassware, glass packaging, chemicals and other business lines in 2017, \$i\$ecam Group holds a confident position in the European Union and global markets. Glass manufacturing is one of the sectors' highest need for energy and resources, yet this industry is derived from a history going back thousands of years with vibrant social contributions. \$i\$ecam is committed to carrying out best practice in its sectoral responsibilities. By being aligned with its vision and mission, \$i\$ecam is creating added value, achieving financial continuity, reducing environmental impact and ensuring lasting value for its stakeholders.

Climate change, resource scarcity, the rise of social networks, digitalization, shift of economic powers and technological innovation are the major global trends that will impact on the company's working processes in the future. While continuing its efforts to become one of the leading companies in all its areas of activity, \$i\$, ecam commits to leaving an equitable, viable and resilient world for future generations by placing an emphasis on the social, environmental and economic implications of sustainability. To this end, we have mainstreamed sustainability principles in our corporate strategy and realigned our operations to add value for generations to come, while striving to become a fair and transparent global player. \$i\$, ecam's sustainability strategy and action plan is our contribution to the universal call for action to end poverty, protect the world and ensure peace and prosperity of all peoples as encompassed by 17 Global Goals of the United Nations 2030 Agenda for Sustainable Development.

As a global, reputable, and financially stable company with a transparent understanding of governance, Sisecam Group has adopted the United Nations Sustainable Development Goals (SDG). Its way forward on the sustainability pathway is built on the sustainability pillars of **PRESERVE**, **EMPOWER** and **PROGRESS**. Sisecam Group is committed to **EMPOWER** its employees, local communities, vulnerable groups and its supply chain by advocating practices that encourages diversity and inclusiveness; **PROGRESS** through a climate neutral and 360° circular model and **PRESERVE** the environment and institutional heritage to ensure a sustainable future for next generation without frontiers.

- Şişecam Group's short-term **PRESERVE** approach, developed in response to the global agenda, is to implement sustainable environmental and natural resource management practices with a special focus on water and land resources.
- Our EMPOWER approach will lead to the integration of diversity and inclusiveness into daily practices both at corporate and operational level, whilst also fostering the advancement of digital intelligence and community inclusivity.
- The **PROGRESS** approach will accelerate the process of becoming an active player in the fight against climate change and implementing circular models into operations. The company's medium and long-term vision is to establish an enabling environment as a champion of corporate heritage, to become an international enabler and advocate for sustainability, and to operate in a climate-neutral 360° circular model.

PRESERVE







EMPOWER









PROGRESS









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CONTRIBUTION TO THE SUSTAINABLE DEVELOPMENT GOALS

With the shared opportunities, risks and goals of all humanity in mind, Şişecam Group adopted the United Nations Sustainable Development Goals (SDG) which has driven the development of the Şişecam Group's Sustainability Strategy.

- Şişecam Group PRESERVEs natural resources and institutional heritage for resilient
 and sustainable generations to come by engaging in and implementing conservational
 and restoration practices. In doing this, it also contributes to SDG 6 (Clean Water and
 Sanitation), SDG 14 (Life Below Water) and SDG 15 (Life on Land).
- The company EMPOWERs the company's employees, local communities, vulnerable groups and supply chain to become an active player for sustainable solutions and international enabler by advocating and engaging in practices that encourages diversity and inclusiveness. Through this approach, it also contributes to SDG 5 (Gender Equality), SDG 8 (Decent Work and Economic Growth), SDG 10 (Reduced Inequalities) and SDG 17 (Partnerships for the Goals).
- The company is committed to PROGRESS through the climate-neutral 360° circular model, which includes but not limited to the sustainable use of energy, natural resources, digitalization and innovation, while encouraging and enabling the equal participation of women and vulnerable communities. This allows it to contribute to SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure), SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).

In addition to its commitment to the Sustainable Development Goals, the Sustainability Strategy's commitment to the UN Global Compact's principles is in line with its aim to become an international enabler while sharing its established and specialized knowledge with global communities and also driving economic, social and environmental sustainability.

SUSTAINABILITY GOALS

The sustainability goals and commitments adopted by Şişecam are aligned with the United Nations Sustainable Development Goals and aim to efficiently and meaningfully implement Şişecam's Sustainability Strategy.

Şişecam is committed to reaching these goals by 2022. Each goal focuses on a key area contained within the Sustainability Strategy and associated performance indicators.

Şişecam takes on responsibilities at every level in order to achieve its goals, baselined on its current performance. Şişecam keeps regular track of its performance, defines improvement areas, and continues its activities with the aim of achieving its goals.

PRESERVE

- By 2022, 5% of treated industrial wastewater reused
- By 2022, at least 20% of recycled glass used for container glass production
- By 2022, at least 10 furnaces used NOx reduction efforts by primary measures
- By 2022, at least 4 industrial synergy programs developed
- By 2022, the forest lands in mine sites increased at a rate of 20%
- By 2022, corporate purchasing procedures within framework of sustainability principles renewed
- By 2022, biodiversity and conservation practices with local communities' engagement initiated in the company's operational regions

EMPOWER

• By 2022, zero target for occupational accidents (LTIFR*)

PROGRESS

- By 2022, reduce GHG emission intensity of glass production by 5% from 2017 baseline
- By 2022, reduce annual specific energy consumption in glass production plants by 2%
- By 2022, 12 MW energy provided through renewable energy sources
- By 2022, at least one additional plant implements reactant pre-heating methodology to reduce natural gas consumption
- By 2022, additional 2 plants implemented Waste Heat Recovery system

^{*} Lost Time Injury Frequency Rate

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Şişecam Group's
Sustainability
Committee works
toward increasing
communication
between working
groups and companies
within the Group on
matters of sustainability
and enables the
implementation of joint
projects for cohesiveness
and synergy.

Sustainability Management

Working Group

on the

Environment

Working Group on

Energy and Water

Sisecam Group's **Sustainability Committee** works toward increasing communication between working groups and companies within the Group on matters of sustainability and enables the implementation of joint projects for cohesiveness and synergy. The main responsibilities of the Committee include, integrating sustainability principles into Sisecam's processes, determining and implementing operational improvement activities, preparing and circulating the Corporate Sustainability Strategy, and coordinating, directing and supervising the activities of sub-working groups within the Sustainability Committee. The Group Deputy Chairmen of Production are active members of the Sustainability Committee who manage the practices of Sisecam Group's Sustainability Strategy within the Groups by representing their own Group Companies in the Committee. In order to keep regular track of activities, the Committee has met four times in 2017 with a participation rate of 76% of its members. The Committee measured the performance of Companies within the Group in terms of achieving sustainability goals.

CEO **Committee Chair** Head of Corporate Development and Sustainability Head of Human Resources and Corporate Communications Head of Procurement for the Group Sustainability Head of Risk Management Committee Flat Glass Vice President for the Production of Basic Glass Vice President for Glass Packaging Production Group - Turkey Vice President for Glass Packaging Production Group - Russia Vice President for Glassware Production Group Vice President for Chemicals Production Group Sustainability Director Strategic Planning and Portfolio Management Director Investor Relations Director Group's Industrial Director Corporate Communication Director Quality and Innovation Manager

Working Group on

Occupational Health

and Safety

Working Group on

Corporate Social

Responsibility

Working Grop on

Innovation

Working Group on

Diversity and

Inclusiveness

The working groups within the committee (Working Group on the Environment, Energy and Water, Occupational Health and Safety, Innovation, Diversity and Inclusion, Corporate Social Responsibility) ensure that Şişecam Group's Sustainability Strategy and action plan are implemented.

Şişecam Group's Sustainability Directorate focuses on coordinating the corporate sustainability activities by connecting teams responsible for production, branding, communications, human resources, infrastructure, procurement and quality. At the same time, it implements innovative practices relating to corporate sustainability reporting, supply chain sustainability, sustainability education programs, measurement of sustainability efficiency, energy and natural resources management, etc. Under the guidance of the Sustainability Directorate, a gap analysis was undertaken assessing the United Nations (UN) Sustainable Development Goals against the Corporate Strategy. This analysis was an opportunity to measure key success indicators within the Corporate Strategy, whilst also identifying areas for improvement. During this gap analysis, research was shared with numerous internal departments and all Groups on the historical development and principles of sustainability, and the United Nations Sustainability Development Goals and indicators of success. This was achieved by holding 15 meetings with the Strategy, Human Resources, RTD, Industrial Relations, Corporate Communication, Environmental Management, Energy Efficiency, Project Management Office, Şişecam Academy, Purchasing and Legal Consultancy units and all the Groups. To establish a connection between these activities and the United Nations Sustainable Development Goals, further analyses were undertaken and reported upon.

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Managing Sustainability Risks

Within the Şişecam Group, risk management activities are dealt with based on corporate risk management principles and a proactive approach.

The management of sustainability risks such as climate change, access to clean energy, natural resources, and occupational health and safety, are a part of the corporate governance model along with all other risks not specifically mentioned.

Sisecam Group's Sustainability Committee is committed to constantly identifying and managing the identified risks, reducing hazard risk levels and proposing appropriate mitigation responses, along with exploring any risks associated with the efficiency of sustainability management.



Risks Identified and Proposed Management Responses Related to the Corporate Sustainability Strategy and Action Plan

RISK TYPE	LEVEL	MANAGEMENT RESPONSE			
Barriers for effectiveness	Medium	Robust regular dialogues with key company stakeholders on sustainability challenges, including employees, investors, NGOs, suppliers and consumers			
Governance & Stakeholders engagement	Low	Elevate sustainability in company governance, including direct board oversight and accountability over environmental and social issues, more diversity and special expertise on boards, and linking executive and other employee compensation to sustainability goals			
Barrier for effective monitoring, reporting and verification	Low	Open reporting on sustainability strategies, goals and accomplishments			
Limited awareness along the value chain on sustainability	Medium	Systematic performance improvements to achieve environmental neutrality and other sus-tainability goals across the entire value chain, including operations, supply chains and products			

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Corporate Management and Business Ethics

Şişecam Group brings together the essentials of strong corporate governance with sustainable practices and systems and competently handles processes with the same dynamics and vigor as risk management. All operations are carried out in accordance with the Ethical Principles of Şişecam Group, and thus the economic, social and environmental sustainability of all Group activities is observed at all times. Concerted efforts are also made to improve performance to greater levels.

TRANSPARENT AND INTEGRATED MANAGEMENT

Management based on transparency and accountability is amongst the most significant values which \$i\$, ecam not only accepts in principle but also implements in practice as a determining factor in its operations. All the practices in this framework are annually presented in a transparent manner for the consideration of all stakeholders in the *Corporate Governance Principles Compliance Report,* in accordance with the relevant Capital Markets Board regulations.

Şişecam places emphasis on corporate management principles, and constantly and dynamically manages all the relevant processes. As a result of the management practices shaped by this approach, Şişecam Group's Corporate Governance Rating rose from 94.4 in 2016 to 94.8 in 2017.



The Corporate Governance Principles Compliance Report is accessible on Sisecam Group's website, in the Investor Relations section.

BUSINESS ETHICS

Şişecam Group's guide for working responsibly is included within *the Code of Ethics*. Updated regularly on a needs basis, *the Code of Ethics* adopts the principles of integrity, transparency, confidentiality, impartiality and compliance with the law. It acts as a guide regulating the relations between Group employees and customers, suppliers, shareholders and other stakeholders.

The Ethics Board works under the Corporate Governance Committee to ensure compliance with the Code of Ethics. The Board's responsibilities include making assessments of practices under the Code of Ethics, ensuring adoption of an ethics based culture within the Group at large whilst also raising awareness of the Code.

The structure of the company's corporate management practices allows the concerns that are shared predominately by employees and stakeholders about operations are that are not in compliance with the law or the Code of Ethics to be conveyed to the management. Employees can report operations that do not comply with regulations or the Code of Ethics to the Inspection Committee and to the Internal Audit Unit. An Ethics Hotline has been launched to allow stakeholders to report their concerns to the Inspection Committee regarding operations which are believed to contradicting laws or the company's ethical values. Complaints can also be made via e-mail to etik@sisecam. com.



More information on the Code of Ethics is accessible on Sisecam

Group's corporate website, in the Corporate Identity and Management tab under Investor Relations.

ANTI-CORRUPTION

Sisecam Group has adopted the Anti-Bribery and Corruption Policy to clearly state its commitment and approach to combating bribery and corruption, as well as to ensure protection of reputation. A complementary part of the Group's Code of Ethics, this policy is aimed at providing the necessary information to combat bribery and corruption in all of the Group's activities, as well as determining rules and responsibilities in this regard.



More information on Anti-Corruption is accessible on Sisecam Group's corporate website in the Corporate Identity and Management tab under Investor Relations.

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ABOUT ŞİŞECAM

2017 PERFORMANCE

STRATEGIC SUSTAINABILITY APPROACH

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STRATEGIC PRIORITIES

STAKEHOLDER DIALOGUE

Strategic Priorities

Şişecam's aim in preparing this report is to create value for its stakeholders, for the Group and for society at large, and its focus has been directed toward these areas. The highlighted areas of the Sustainability Strategy constitute our material issues.

Global trends, international reports concerning sectors and a perspective that takes into account the country's agenda are considered while identifying strategic priorities.

Şişecam's Material Issues are then established by the management and Sustainability Committee with Şişecam's strategic priorities in mind. In addition to sustainability risks and opportunities, the impact of possible legislative regulations is considered.

Sisecam's internal and external stakeholders are also included in this process. An example of this can been seen at the 1st International Sustainability Workshop organized to more effectively receive the opinions of employees, as well as to contribute to the development of goals specified in the Sustainability Strategy.



International Sustainability Workshop

The workshop was themed around the topic "Toward an Interdisciplinary, Interactive and Creative Sişecam" and was organized in order to enable creative, participatory solutions and practical ideas to flow. This allowed operations to be organized easily and effectively with a sustainable Sişecam target based on Sişecam Group's three main sustainability principles (PRESERVE, EMPOWER, PROGRESS).

The Sustainability Workshop program covers the relevant subjects of the Environment, Energy & Water, Diversity & Inclusiveness, and Innovation among the working groups that operate under the Sustainability Committee (Environment, Energy & Water, Diversity & Inclusiveness, Innovation, Corporate Social Responsibility, and Occupational Health & Safety).

As part of the workshop the following subjects were addressed, and road maps were created in order to improve future activities:

- Waste Management
 (Symbiotic Practices, Cross-Checks, Documentation)
- Sustainable Energy and Water
- Diversity and Inclusivity
- Digitalization and Data Management

A total of 153 people from the \$i\$ecam Headquarters and domestic and overseas factories, 40% female and 60% male, took part in the workshop. Participants from Bulgaria and Russia also joined the workshop via video-conferencing. The workshop presentations were shared with the facilities in all countries.

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Stakeholder Dialogue

Sisecam Group considers dialogue with its stakeholders as an integral part of its operations, whilst also continuously developing its Sustainability Strategy and its performance. Aware of the value created by a diversity of ideas, the company integrates stakeholder expectations into decision-making processes continuously through mutual communication channels. In this context, the company is continuing its dialogue with stakeholders on different platforms and at intervals required by the state of affairs.

Şişecam's performance with regards to the set sustainability priorities is regularly shared with stakeholders in the form of sustainability reports. The feedback obtained is one of the most important tools used to advance \$isecam's Sustainability Strategy and its performance.

MAIN STAKEHOLDER GROUPS AND COMMUNICATION PLATFORMS							
Stakeholder Group	Communication Method	Frequency of Communication					
Analysts	Face-to-face meetingsWorkshops	At least four times per year					
Employees	 Satisfaction survey Platforms for sharing recommendations and opinions Face-to-face interviews based on direct feedback Seniority encouragement award Recognition and award system 						
Shareholders	 General Board of Director meetings Briefing reports published periodically (e.g. Annual Activity Report, CDP reporting, revenue and interim activity reports) Social media 	At least twice per year					
State Institutions	 Regular reporting Meetings, forums and conferences Press statements One-on-one meetings 	Continuously					
Customers	 Satisfaction surveys Social media Feedback obtained through face-to-face meetings, conferences, phone calls and e-mail 	Continuously					
Non-Governmental Organizations (National and International)	Strategic cooperationEvents	At least once a month					
Suppliers	 Daily work flow Face-to-face meetings E-mail correspondence 	Continuously					
Universities	 Conferences Active participation in joint operations (projects, supplying grants, etc.) Internship programs 	Annually					
Investors	 Telephone/teleconference and e-mail correspondence Face-to-face meetings Workshops 	At least twice per year					

PRESERVE EMPOWER PROGRESS

TÜRKİYE ŞİŞE VE CAM FABRİKALARI A.Ş. SUSTAINABILITY REPORT 2017

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CORPORATE MEMBERSHIPS						
INTERNATIONAL	NATIONAL					
German Society of Glass Technology	Packaging Manufacturers Association					
European Container Glass Federation	R&D Centers Communications Platform					
European Society for Glass Science and Tech-nology	Environmental Protection and Packaging Waste Recovery and Recycling Foundation					
Glass for Europe	Foreign Economic Relations Board – Turkish -European Union Business Council					
European Flat Glass Union	Foreign Economic Relations Board - Turkish - Eurasia Business Council					
European Glass Fiber Producers Association	Electricity Producers Association					
European Glassware Committee	Association for Food Production					
European Physical Society	Solar Energy Industries Association					
European Physical Society (Working Group)	Istanbul Chamber of Industry – Environment Specialisa-tion Board					
European Chemicals Agency	Istanbul Chamber of Industry – Technoparks Commission					
European Soda Ash Producers Association	İstanbul Foundation for Culture and Arts					
European Renewable Energies Association	Carton Board Packaging Manufacturers Association					
Container Glass and Glassware Committee	Composite Manufacturers Association					
International partnership for Glass Research	Enterprise Risk Management Association					
Glass Trends Association	Corrugated Packing Manufacturers Association					
EUREKA Cluster for Low Carbon Technologies	Petroleum and Natural Gas Platform Association					
Eurosolar	Ceramic, Glass and Cement Raw Materials Manufacturers Association					
Glass Alliance Europe	Turkish Family Health and Planning Foundation					
International Partnership for Glass Research	Turkish Construction Material Producers Association					
International Glass Commission	Turkish Foundation for Quality					
International Crystal Federation	Turkish Chemical Manufacturers Association					
International Chromium Development Associ-ation	Cogeneration and Clean Energy Association of Turkey					
National Fire Protection Association	Corporate Governance Association of Turkey					
	Turkish Miners Association					
	Union of Chambers and Commodity Exchanges of Turkey, Working Groups					
	National Fire Protection Association					
	Turkish Investor Relations Society					





NATURAL RESOURCE MANAGEMENT
ENVIRONMENTAL AND INSTITUTIONAL
HERITAGE STEWARDSHIP

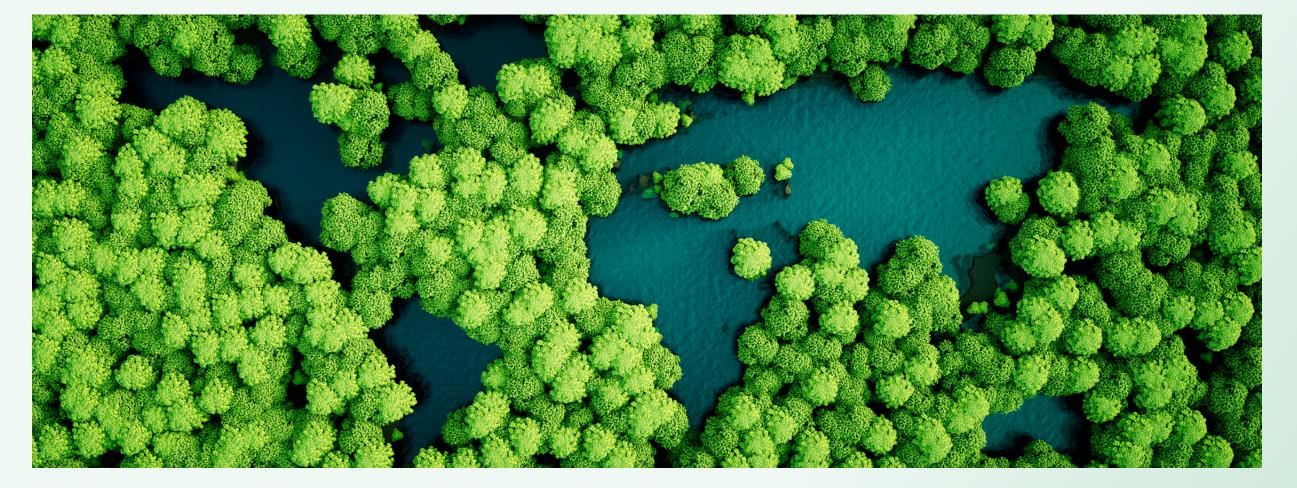
By focusing on the efficient use of resources in processes, waste is reduced at its source, effective water management practices are implemented, and products with reduced environmental impact are designed.

PRESERVE

Şişecam <u>PRESERVE</u>s natural resources that it relies on and its institutional heritage for resilient and sustainable generations to come by engaging in and implementing conservational and restoration practices.

Through its PRESERVE approach, developed in response to the global agenda, Şişecam implements sustainable environmental and natural resource management practices with a special focus on water and land resources.

By focusing on the efficient use of resources in processes, waste is reduced at its source, effective water management practices are implemented, and products with reduced environmental impact are designed. While ensuring continuous improvement of its environmental sustainability performance in accordance with its strategic approach, \$isecam also achieves significant reduction in its operational costs.



NATURAL RESOURCE MANAGEMENT
ENVIRONMENTAL AND INSTITUTIONAL
HERITAGE STEWARDSHIP

Şişecam Group plans to achieve the following targets by 2022 as part of the PRESERVE approach:



By 2022, 5% of treated industrial wastewater reused



By 2022, at least 20% of recycled glass used for container glass production



By 2022, at least 10 furnaces used NOx reduction efforts by primary measures



By 2022, at least 4 industrial synergy programs developed



By 2022, the forest lands in mine sites increased at a rate of 20%



By 2022, corporate purchasing procedures within framework of sustainability principles renewed



By 2022, biodiversity and conservation practices with local communities' engagement initiated in the company's operational regions

Şişecam Group also plans to achieve the following targets by 2022 in order to preserve and keep the cultural heritage in the glass sector alive:



By 2022, at least 10 production related best practices are documented and shared through social media



By 2022, at least 20 knowledge products are accessible to vulnerable groups



By 2022, all the foundation memories are collected and exhibited for the view of general public



By 2022, history of Şişecam is translated to Braille alphabet in 5 languages and shared with respective communities NATURAL RESOURCE MANAGEMENT
ENVIRONMENTAL AND INSTITUTIONAL
HERITAGE STEWARDSHIP



Şişecam works to minimize its environmental impact with sustainable environmental management practices, and continuously strengthens its performance on environmental protection.

ENVIRONMENTAL AND ENERGY MANAGEMENT SYSTEMS

Şişecam works to minimize its environmental impact with sustainable environmental management practices, and continuously strengthens its performance on environmental protection.

Sisecam carries out environmental management activities according to the Environmental Management System already established in all its factories in Turkey, applying the ISO 9001 Quality Management System, ISO 14001 Environmental Management System and ISO 50001 Energy Management System in this context.

As a result of the cross-checks performed with the participation of environmental engineers working in various plants of the Group, reports are prepared about the practices in place at each plant, prominent good practices and negative findings. Therefore, while collecting up-to-date information about the present practices carried out in the plants, the Group's environmental engineers working in different production activities can benefit from each other's experiences.

Şişecam carries out active works aimed at disseminating the recycling culture among its stakeholders, along with its awareness activities which are a part of the Energy and Environmental Management approach. In addition to its recycling projects, Şişecam contributes to educative, supportive and consciousness-raising activities to contribute to reducing environmental impact.

This year it also completed the Environmental Data Recording Project, enabling the recording of the environmental data through an internet-based system.

In 2017, Sisecam was not fined with reference to any significant environmental issues.

	Şişecam Glass Packaging	Şişecam Glassware	Şişecam Flatt Glass	Şişecam Automotive	Şişecam Chemicals	Cam Elyaf San. A.Ş.	Camiş Madencilik A.Ş.
ISO 14001	✓	√	✓	✓	√	✓	✓
ISO 50001	√	√	√	✓	√	✓	✓

QUALITY MANAGEMENT SYSTEM AND PRODUCT SAFETY

Şişecam aims to meet customer needs in the best way possible by keeping quality and product safety management at the highest level achievable. In order to do this, Şişecam's activities are managed by the ISO 9001 Quality Management System, which is present in all facilities.

	Şişecam Glass Packaging	Şişecam Glassware	Şişecam Flatt Glass	Şişecam Automotive	Şişecam Chemicals	Cam Elyaf San. A.Ş.	Camiş Madencilik A.Ş.
SO 001	√	✓	√	✓	√	✓	\

	FSSC 22000 (ISO/TS 22002-4)	ISO 15378	HELAL	FDA	FAMIQS	KOSHER
Şişecam Glass Packaging	✓	✓				
Şişecam Chemicals	✓		✓	✓	✓	✓

The Group companies within Şişecam carry out product-specific practices in order to maximize customer satisfaction and product quality. As part of the Food Safety Management System for products and the product processing environment, a Food Safety Hazard Analysis and Risk Table is created, and the relevant risk table is mapped by grading the biological, chemical and physical hazards that could threaten product safety and human health. Hazards are continuously tracked based on their risk points, and the areas containing hazards are defined as Critical Check Points. Raw materials and finished products are stored in separate areas in order to prevent interaction.

ENVIRONMENTAL AND INSTITUTIONAL HERITAGE STEWARDSHIP

Natural Resource Management

The strain placed on natural resources due to population growth is making the development of sustainable practices in the use of water and other natural resources a necessity. Şişecam is committed to preserving natural resources in order to leave behind a resilient and sustainable world for new generations to come. In keeping with the Sustainability Strategy's PRESERVE principle, shared by Goal 9 "Industry, Innovation and Infrastructure" and Goal 12 "Responsible Consumption and Production" of the United Nation's Sustainable Development Goals, Şişecam integrates this approach into all its business processes. Şişecam continues to further strengthen its performance in this area through sustainable environmental and natural resource management practices.



WASTE MANAGEMENT

Understanding that waste management plays an important role in making sustainable production and consumption habits more widespread and in the transition to a cyclical economy, Şişecam reduces waste at its source, recycles waste materials, and aims to reduce the use of natural resources by reusing waste in all its activities

The waste management understanding at \$i\$ecam covers glass waste collection and recycling activities with a holistic perspective. \$i\$ecam also conducts activities to create a suitable infrastructure for increasing the efficiency of glass waste collection and recycling activities in Turkey.

Şişecam now performs waste management so as to reduce the environmental impact. Hazardous waste constitutes less than 1% of Şişecam's total waste. Waste reduction through recycling makes up an important part of the waste management approach, and raw materials are used effectively with the reuse of recycled products in the production processes. In addition, Şişecam has benefited from obtaining about 440,000 TL of financial savings with a waste reduction of about 1,100 tons.

Glass is a product which can be recycled infinitely and is characterized by being the healthiest packaging material. At \$i\$, ecam, glass is brought back into production using sustainable practices. **Glass Packaging** supplied 172,000 tons of pieces of glass as of 2017, and used recycled glass in the production processes by reducing the use of raw materials. Pieces of glass are used as an input in production among the Group companies of \$i\$, ecam as well. About 25,000 tons of glass pieces were taken from **\$i\$, ecam Automotive**, recycled and used by **Glass Packaging**. This reduces both the use of raw materials and also production costs by working towards the implementation of a circular economy model.

ENVIRONMENTAL AND INSTITUTIONAL HERITAGE STEWARDSHIP

Glass and Glass Again

Sisecam does not limit waste management just to supply and production processes, and has been conducting the Cam Yeniden Cam Project since 2011 after cooperation with ÇEVKO Foundation and local administrations in order to create a change in social behavior regarding this matter. As one of Turkey's most comprehensive sustainability and social responsibility projects, the project is conducted in line with three main targets:

- Raising awareness and informing society about the recycling of glass packaging
- Developing infrastructure for the collection of glass packaging waste
- Modernizing plants where glass packaging waste is collected and processed and separating glass packaging waste mixed in with domestic waste prior to regular storage.

As part of the project, 2,914 glass banks were provided for use by the municipalities in 2017, and 20,000 students were educated in how to recycle glass. During the 2011-2017 period of the project, 254,000 primary school children were given education on recycling, 19,800 glass banks were provided for use by municipalities, and 912,000 tons of glass waste were recycled. As a result, a reduction in carbon emissions equivalent to taking 328,400 cars off the roads and enough energy savings to heat and provide hot water for 38,300 households were obtained thanks to \$iṣecam's recycling efforts.

Furthermore, cooperation with a total of 163 district municipalities in 24 provinces received support on creating social awareness, developing collection infrastructure, and modernizing glass recycling plants.

Through the various communication activities provided throughout the Glass and Glass Again Project, Sisecam raised the awareness of 35,000 people thanks to the events where recycling's contributions to the sustainable future of the environment were explained.

Thanks to glass recycling







 Enough energy savings were generated to heat and provide hot water for 38,300 households,



 Reduction of CO₂ emissions equivalent to 328,400 cars being taken off the road occurred.



 Reduction of CO₂ emissions equivalent to the air cleaned by 28,160,000 trees occurred.

Through its social media accounts whose followers and interactions are increasing every day, Glass and Glass Again raised its monthly interaction rates in social media to 3 million. Live streams of the events that were held throughout the year were also published on these social media accounts, where the importance and gains of recycling and information about glass' uses were shared with various scenarios. The project's followers numbered 53,000 on Facebook, and 7,000 on Instagram by the end of the year. The Glass and Glass again Project contributes greatly to awareness and consciousness-raising activities thanks to its interaction with large target groups through social media accounts.



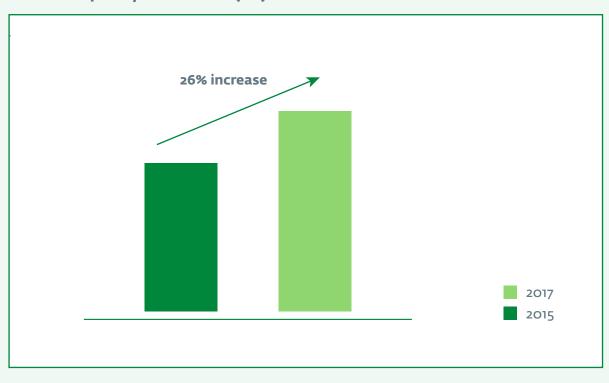
ENVIRONMENTAL AND INSTITUTIONAL HERITAGE STEWARDSHIP

WATER MANAGEMENT

Water management is one of Şişecam's focus areas within the scope of its PRESERVE approach. Şişecam aspires to reduce water consumption by promoting more efficient use of water. Based on a natural resource management approach, the water that is treated in waste water treatment plants is recycled and reused. Therefore, Şişecam aims to use water – one of our most important natural resources – efficiently.

Şişecam achieved financial savings of about 485,000 TL with water savings of around 374,000m³ in 2017. The recycled water used in all plants has risen to about 2.6 million m³ thanks to the increase in the amount of recycled water by %26 over the last two years. The amount of waste water, on the other hand, has decreased by 11% over the last two years.

Amount of Recycled Water (m³)



Şişecam works to effectively manage its water footprint and achieve its water saving goals through systems that are inspired by its PRESERVE approach and planned to be passed onto future generations.

AIR EMISSIONS

Air emissions are among the sector's main environmental impacts. Aware of the importance of the reduction of nitrogen oxide (NOx), sulfur oxide (SOx) and carbon emission levels, \$i\$ecam is actively working on improvement projects. Improvement activities aimed at production are being continued to meet the target of reducing NOx emissions by 2022.

Şişecam carries out projects to reduce the NOx emissions caused by glass furnaces during its production processes. Within this scope, it works to reduce both fuel consumption and emissions with primary measures. As a consequence, Şişecam has aimed to achieve reduction at the source by optimizing operation conditions. The target is to develop these practices in the upcoming period and take the performance in this field one step further.

In 2017, Şişecam reduced its NOx emissions from production activities to 13 million tons.

In glass production processes, natural gas is mainly used. Therefore, there is no SOx emission related to fuel and burning. Even though the SOx caused by some of the raw materials of glass with sulfate content is very low, research continues to find raw material alternatives that will minimize such emissions.

Precautions regarding carbon emissions and their reduction have been provided in detail under the Low-Carbon Production section of the Report.



ENVIRONMENTAL AND INSTITUTIONAL HERITAGE STEWARDSHIP

BIODIVERSITY

In line with Goal 15 of the United Nations Sustainable Development Goals to "protect, restore and promote the sustainable use of terrestrial ecosystems", biodiversity protection and management constitutes an integral part of Şişecam's vision for sustainability and its strategic goals.

Şişecam carries out afforestation and conservation activities to increase the value of biodiversity in the areas where it operates. It allocates an area of about 5-10 acres within the boundaries of all its plants for afforestation activities, and creates Şişecam Forests in all areas where it operates. A Şişecam Forest of about 368 arcres has been created this year in the Yalıköy region where Camiş Madencilik A.Ş is located. A forest consisting of about 18,000 trees has been planted within the factory site of Denizli Cam Sanayii ve Ticaret A.Ş. Thanks to the planting event held regularly by **Soda Sanayii A.Ş.**, the number of trees has reached 40,000 after 12 years.

Acting with the awareness of the fact that its manufacturing processes are dependent on nature, Şişecam takes into account the environmental impact of its activities and carries out projects to protect nature. The coastline in the Mersin Kazanlı region where the Soda Sanayii factory is located is the nesting site of loggerhead sea turtles whose numbers are rapidly depleting.

Within the scope of "The Project for Researching, Studying and Protecting Sea Turtles at Kazanlı Beach of Mersin Province", which was carried out between 2007-2017 with the cooperation of Şişecam Chemicals and Mersin University, the nest sites of endangered Caretta caretta and Chelonia mydas turtles were taken under protection. In addition to this, awareness-raising activities to inform local people in the region about the subject, and coastal cleanup activities aimed at preserving the habitats of turtles and protecting endangered sea turtles continued. As a result of the work carried out, the number of nests has increased steadily since 2007, and with the 1,705 sea turtle nests detected in 2016, the project achieved a 10-year record number of turtle nests.

After the completion of the project, this year it was aimed to increase the survival chances of baby turtles before the nesting period by carrying out a beach cleaning activity under the leadership of Şişecam. Local school students, as well as employees and their children, attended the beach cleaning activity.

Şişecam increases the value of biodiversity, while raising a green world consciousness in future generations with these activities which it carries out by following its PRESERVE principle.





ENVIRONMENTAL AND INSTITUTIONAL HERITAGE STEWARDSHIP



Hayatacamkat.com, has achieved great success by making it to the finals of the Corporate Blog Category along with other strong brands, in the Golden Spider Contest, an independent web award.

Environmental and Institutional Heritage Stewardship

As one of the global industry leaders, Şişecam is aware that honoring one's heritage is crucial to a sustainable future. Ever since its foundation, it has been operating in the field of glass as an architect of this cultural heritage. Şişecam's medium and long-term vision is to create a suitable environment in terms of its corporate heritage responsibility. That is why it has always worked to protect and keep the heritage of glass alive.

The Glass Works Collection archived at Istanbul Archeology Museum and collected to protect the cultural values of \$i\timesecam Group consists of 520 ancient glass works which reflect a history that spans about 3,500 years. These works are protected and displayed in a special area at the new \$i\timesecam Headquarters. Apart from the Glass Works Collection, the Bodrum Museum of Underwater Archeology Glass Hall, which was opened with the support of \$i\timesecam, is the only underwater archeology museum in Turkey. It is one of the most important glass museums in the world and continues to serve history lovers.

Under its **History, Culture and Glass Collections** which reflect the history and culture of Anatolia in glass, about 500 different products have been developed. Şişecam's mission to protect its cultural heritage and pass it on to future generations has been supported by the Osmanlı, Camda Mavi Beyaz, Camda Sanatlı Yazı, Mineli Camlar, Mozaik, Anadolu Medeniyetleri, 7, Aşure, İstanbul, Kristalin Çiniler, Konuşan Paralar/Sikkeler and Zevk-i Selim, and lastly the **Camda Dünya Mirası** collections.

The Omnia Collection, which has been exhibited to strengthen glass culture heritage extending from past to present and to redefine the functions of traditional productions, products and objects was revived with the **Omnia Water Collection.** Displayed to consumers after being shaped by its water theme, the collection also supports Deniztemiz Association/TURMEPA's *Deniz Varsa*, *Hayat Var Project*.

Şişecam has produced documentaries that include critical findings in terms of glass production and recycling within the scope of the importance it attaches to environmental values. The Serçe Limani Cam Batığı Documentary, which explains the story of how the **Serçe Harbor Glass Shipwreck** exhibited in Bodrum Museum was discovered and provides information on the glassware, glass nuggets and pieces of glass found in the sunken area provides important contributions to underwater archeology. With the Cam Yeniden Cam Documentary, it is aimed to raise viewers' awareness of underwater archeology and the fields of glass production and recycling.

Through particular projects such as the **Glass Consultancy** service, offered according to need, and the **Reference Projects Book**, which compiles the relevant best practices, Flat Glass shares its knowledge collected over many years on a national and international scale. Şişecam's corporate heritage is shared through **Şeffaf Bülten** and **Camekan Magazine** with those stakeholders who cannot be contacted in person.

Activities showing how glass can contribute to our lives have been carried out by **Glass Packaging,** focusing on the importance of glass within our cultural heritage. Furthermore, the website hayatacamkat.com, established to inform consumers about glass packaging and promote the use of glass packaging, has undergone a redesign. **hayatacamkat.com has achieved great success by making it to the finals of the Corporate Blog Category along with other strong brands, in the Golden Spider Contest, an independent web award.**

In addition to all of the above, **training and activities**, intended both for the sector's authorities and for the engineers and architects of the future, are organized to raise awareness and pass down our cultural heritage to new generations.



DIVERSITY & INCLUSIVITY
INTERNATIONAL ENABLER TO
FOSTER SUSTAINABILITY

DIGITAL INTELLIGENCE AND COMMUNITY

EMPOWER

Şişecam EMPOWERs its employees, local communities, vulnerable groups and supply chain to become an active player for sustainable solutions and international enabler by advocating and engaging in practices that encourages diversity and inclusiveness.

Şişecam's EMPOWER approach will lead to the integration of diversity and inclusiveness into daily practices both at corporate and operational level, while also fostering the advancement of digital intelligence and community.

Şişecam Group empowers its employees, local communities, vulnerable groups and supply chain to become active players in sustainable solutions by advocating and implementing practices that encourage diversity, inclusiveness and digitalization.

Within this framework, the targets that it has set out to achieve by 2022 are as follows:



By 2022, UN Global Compact ratified and annual reports submitted regularly



By 2022, zero target for occupational accidents (LTIFR*)



By 2022, energy data fully on line monitored and reports generated



By 2022, environmental data fully monitored and reports generated through database

* Lost time injury frequency rates

DIVERSITY & INCLUSIVITY
INTERNATIONAL ENABLER TO
FOSTER SUSTAINABILITY

FOSTER SUSTAINABILITY

DIGITAL INTELLIGENCE AND COMMUNITY

THE WORKING EI

THE WORKING ENVIRONMENT AT ŞİŞECAM

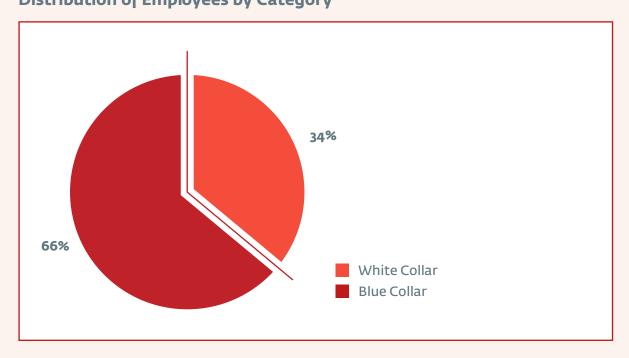
The most decisive factor in Şişecam Group's achievements is its employees. Şişecam provides its employees with a fair and enjoyable work environment in which all employee rights are given in compliance with national and international standards, without any discrimination. In this framework, we establish industry relations focused on competitiveness and productivity as required by today's working conditions, creating a culture of occupational health and safety that is in keeping with Şişecam's corporate culture.

Şişecam ranks among the world's leading industrial institutions with its 21,327 employees in 13 countries. In the Turkish facilities, 34% of the 14,155 employees are white collar and 66% are blue collar. The company promotes an innovative and co-operative corporate culture for sustainable global success, and implements the best human resources practices in the areas where it operates, pursuing a human resources policy that adds value to all stakeholders.



Şişecam Group's Human Resources Policy, developed in line with its focal points such as becoming global, ensuring equal opportunities, inclusiveness, objectivity and continuous improvement, is translated into the languages spoken in the countries where Şişecam is active, and then shared through the corporate communications portal.

Distribution of Employees by Category





INTERNATIONAL ENABLER TO FOSTER SUSTAINABILITY

DIGITAL INTELLIGENCE AND COMMUNITY

Diversity & Inclusivity

Innovative and productive societies flourish only in those environments where there is diversity and equal opportunities. Şişecam aspires to strengthen and preserve the diversity and cultural heritage of global human resources for generations to come. It bases all its practices on inclusiveness and equality of opportunity.

With the "Empower" principle of the Sisecam Sustainability Strategy, Sisecam is putting forth a strong, people-oriented management approach that focuses on strengthening all stakeholders, especially women. It intends to strengthen its employees and stakeholders through the implementation of practices that promote diversity and inclusiveness in connection with the UN's Sustainable Development Goal 5 Gender Equality and Goal 10 Reduced Inequalities.



One of the biggest issues regarding discrimination that business world faces today is the women employment. Sisecam support women's employment and encourage women employees to take part in the top management bodies.

With the establishment of the Working Group on Diversity and Inclusiveness under the Sustainability Committee, it is planned to begin the required activities with the contributions of internal and external stakeholders. In this context, proposals for action are being prepared by the working group on Enhancing and Facilitating Women's Working Conditions, Supporting Women's Participation in the Workforce and Supporting their Career Development, and Raising Awareness and Cooperation with Stakeholders.

Şişecam carries out the management of employee wages, benefits, career paths and performance without discrimination of any kind based on gender, religion, language, or race. No discrimination is made between employees with a similar set of skills and job experience. There have been no discrimination cases or complaints brought against Şişecam.

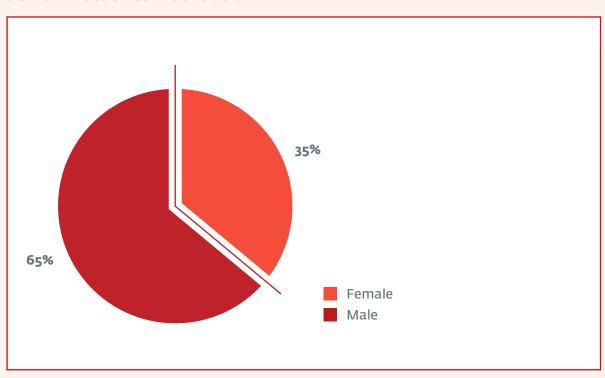
At \$i\$ecam, 29% of white collar employees, 35% of senior management and 22% of the Board of Directors are female. This year, the number of newly hired female employees has increased by 28%, and the rate of newly hired female employees within the total number of new employees has increased by 4%. As a result of practices that encourage female employment, the ratio of female employees who have returned to work after maternity leave has reached 86%.



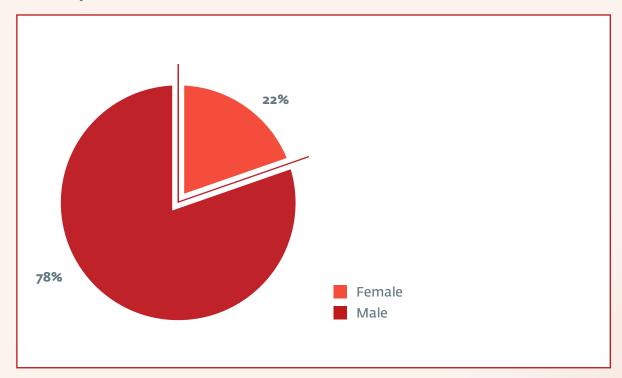
INTERNATIONAL ENABLER TO FOSTER SUSTAINABILITY

DIGITAL INTELLIGENCE AND COMMUNITY

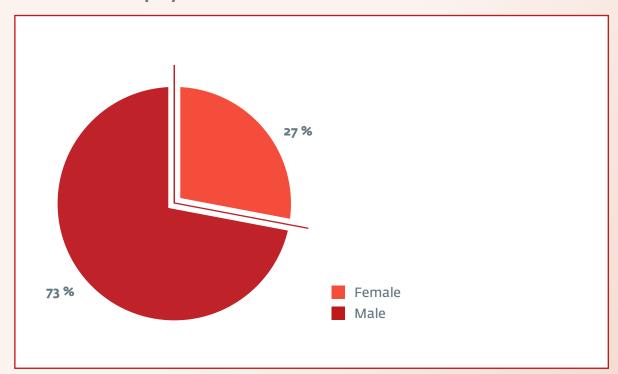
Senior Executives Distribution



Board of Directors Distribution



White Collar Employee Distribution





INTERNATIONAL ENABLER TO FOSTER SUSTAINABILITY

DIGITAL INTELLIGENCE AND COMMUNITY

EMPLOYEE RIGHTS

Sisecam always protects the fundamental rights and liberties of its employees, and applies, in accordance with market conditions, provides competitive wages and side benefit strategies that reward stable high performance. Human resource programs that support a work-life balance for employees are put into place.

Flexible working opportunities are created for employees on the basis of a diverse workforce with different expectations and needs, and flexible working hours, flexible side benefits and social activities are offered.

All Şişecam employees can choose to be included in the Private Pension Scheme supported by employer contributions according to the provisions of the Private Pension System (PPS) Regulation. Providing that employees are in the system, an amount that equals 3% of their gross wage is paid as PPS contribution share.

The protection of workers' trade union rights is a top priority. Sisecam puts a strong emphasis on enabling employees to be fairly represented within the framework of a healthy structure in their relations with the company management and to freely exercise their collective bargaining and organization rights. Sisecam conducts relations with trade unions under the coordination of the Industrial Relations Directorate within the company. In fact, 88% of Sisecam's blue collar employees are covered by a collective labor agreement.

SAFE WORKING ENVIRONMENT

Sustainable success is only possible with the presence of a well-established OHS culture. Sisecam carries out all stages of its activities in a healthy and safe work environment.

The health and safety of \$i\$ecam employees is managed by the OHSAS 18001 OHS Management System, which is in place in all production facilities. Accordingly, all domestic \$i\$ecam factories operating in different areas are subject to cross-inspections by teams of OHS Experts.

As part of the Human First philosophy, work is still being conducted to internalize the OHS culture. This year, the **OHS Ambassadors** project and its efforts were evaluated and good practices were shared. Spot films about the effects of serious accidents in the factories and the Guidelines for Working Safely were made available to all employees in the country. In addition, OHS leadership training was given to managers involved in the production stages to help promote the concept of leadership, a prominent factor in the development of the OHS culture

Şişecam works to fulfill its target of performing every stage of its production activities mentioned in its OHS Policy in a healthy and safe working environment. In this context, Sisecam provided about 16 hours OHS training per employee in this year.

As part of the Occupational Health and Safety Week celebrations, an Occupational Health and Safety Painting Contest was organized for the children of Şişecam employees aged 6-10 across all of the Group's companies in Turkey and overseas. A total of 135 paintings were submitted from 9 Turkish and 14 foreign factories belonging to the Group all themed around "Occupational Health and Safety in Social Life". An awards ceremony was then held with the participation of senior management, where the winning children and their parents were awarded.

While no fatal accidents or occupational diseases have been reported in \$i\$ecam, the number of accidents has been reduced by 21% compared to 2015 as a result of the improvements. Accordingly, the frequency rate of the injuries decreased by 31% and lost working days decreased by 17% compared to 2015.

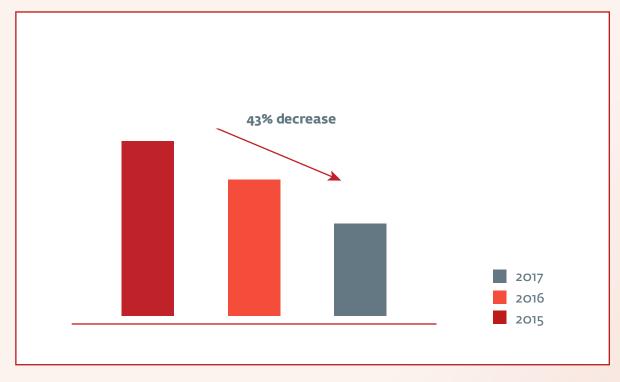
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- Şişecam provides its employees with a healthy and safe work environment through constant improvements being made.
- In addition, employees are informed about the most common risks through Toolbox Talks carried out at Şişecam Chemicals
- With the Regulatory and Preventative
 Activities System developed in
 Şişecam Glassware, workplace
 accidents are systematically monitored
 and instantaneous risks are detected
 with daily field visits. The use of
 personal protective equipment is
 being increased to reduce the most
 common accidents such as cuts and
 burns.
- The operational processes at four factories in Şişecam Flat Glass have become streamlined and improved through 18 Lean Six Sigma projects.
 Operational vulnerabilities are reduced to the point of zero through Lean Six Sigma operations, and accidents likely to be caused by shards of glass are avoided.

Total Injury Frequency Rate (IR)



INTERNATIONAL ENABLER TO FOSTER SUSTAINABILITY

DIGITAL INTELLIGENCE AND COMMUNITY

EMPLOYEE WELL-BEING

Şişecam provides a healthy, safe and eco-friendly work environment by constantly improving its approaches aimed at ensuring employee loyalty, job satisfaction and cultivating a positive business climate.

The 3rd Employee Loyalty Survey, intended to measure the employee commitment and to introduce the improvement activities by taking advantage of the results, was conducted in order to create an appropriate working environment for employees. For the first time this year, white collar employees, as well as blue collar employees in domestic factories and operations, were included in the survey. In addition to the Employee Loyalty Survey, the Corporate Reputation Survey was also conducted for white collar employees. The participation rate in the Employee Loyalty Survey held by \$isecam Group to cover the entire Group rose to 84% this year from 77% in 2015. The participation rate in the Corporate Reputation Survey exclusively prepared for white collar employees was 77%. All feedback and complaints received from employees this year were responded to.

Şişecam believes that long-term employees have an important place in the company's long-term operation and success. For this reason, Şişecam creates a business environment that enables employees to contribute to work processes and offers career and development opportunities to them. Approximately half of all employees have been working for the company for over 10 years and the employee turnover rate is 11%.

Şişecam is introducing a variety of systems and projects in order to create a participatory corporate culture in which employees can participate in company decision-making mechanisms, exchange ideas and suggestions, communicate effectively and learn about new developments within the Şişecam Group.



Camport- Şişecam Group maintains the communication between its employees in a user-friendly, easily-accessible and interactive structure with Camport, the corporate intranet system that is commonly used within Şişecam Group.



Idea Factory - With the Idea Factory platform that enables \$i\$, ecam employees to be involved in the RTD and innovation processes, innovative ideas that provide added value for the company, increase efficiency, aim to develop the business climate and corporate culture, and adopt innovation are evaluated and awarded.

Şişecam rewards its employees' projects that have a positive effect on business results, and evaluates any ideas that could create added value for the Group with its Suggestion Development System. As part of its appreciation practices, employees' exemplary behavior and success are recognized within the company. Among these practices, *Şimdi!* (Now!) (Şişecam Social Activity Club) enables employees to participate in leisure activities in the workplace, as well as voluntarily take part in the design and organization of such activities. Furthermore, the Şişecam Volunteers Project has been realized to enable employees to actively participate in social responsibility projects.

INTERNATIONAL ENABLER TO FOSTER SUSTAINABILITY

DIGITAL INTELLIGENCE AND COMMUNITY

TALENT AND CAREER MANAGEMENT

In line with its mission to become an employee brand, Sisecam pursues an objective, systematic and development-focused approach in all of its human resources processes from recruitment to career management, education and development to performance management. It designs training programs to support the professional and individual development of its employees. It also provides regular performance assessments, career management and development opportunities for all its employees to enhance their competencies and provide new opportunities in different areas.

Within the **Şişecam Group Career Management System**, which is an important program for retaining highly-skilled employees, organizational and personal needs are planned and all of our employees are offered the opportunity to progress in their careers. White and blue collar employees can participate in work carried out by the Assessment and Development Center through which competency analyses are conducted and development plans are created. The company contributes to the development of its employees on issues ranging from education and the environment to social skills and leadership, besides technical issues, such as occupational development and OHS, to enable its employees to embrace its sustainability goals. In 2017, white collar employees received 44.7 hours of training per person, while blue collar employees received 20.8 hours.

A *Glass Production Simulation* was prepared to transfer basic information and raise awareness about glass production, which is \$i\$, core business. The technique of dramatization was used in the simulation which covered the history of glass, the history of \$i\$, an introduction to \$i\$, and the production processes used at the Flat Glass, Glassware and Glass Packaging Groups. It was enriched with tasks, points, competition and problem solving. The three employees with the highest scores were awarded at the end of this process attended by about 1,200 employees.



English Language Development Program

The English Language Development Program was designed in 2017 in keeping with \$i\$,ecam's global adaptation strategy to ensure that employees develop their English language proficiency. Within the program's design, an 18-month coeducation training program has been prepared which provides an opportunity for employees to benefit from various methods and techniques, considering the needs and expectations of the Group. Participants benefit from face-to-face group lessons, in-class follow-up lessons, personalized digital content, simultaneous online class (webinar) apps, multiple media apps and rich study resources as part of the coeducation program.



Şişecam Academy

Şişecam Academy continues to offer its employees placements in schools and training programs related to their career pathways and needs in the areas of technical/professional development, personal development, institutional development and leadership through its unique development solutions.

A coeducation model is applied in the design of schools and certificate programs within the Academy by benefitting from various educative methods. Thanks to the coeducation model, different methods and techniques such as pre-study, homework, project, workshop, digital education resources, in-class and distance education are provided and combined for the participants. In addition to the Leadership School, Sales School, Glass School, and HR Certificate Program available in Turkey, the 2.0 Program was launched in 2017 enriched with the Marketing School, Supply Chain School, Financial Works School, Foreign Trade Certificate Program and various practices of the Leadership School, as well as collaborations made with Turkey's reputable universities. There is also a Leadership School in Russia and Bulgaria, a Sales School in Russia, and a Glass School in Bulgaria.

With the education catalogues prepared based on job family, technical and personal development training that is required to be taken by the employees has been determined per position depending on the competencies of that job family. In addition to these activities, employees have the opportunity to take part in both domestic and international conferences, seminars and summits on various topics, receive foreign language support and pursue MA degrees with a certain amount of support from the company.

This year, apart from the Glass School activities, two new advanced training courses, namely Raw Materials and Melting - Affination and Glass Faults, were prepared and were each held for the senior engineer and chief positions in all production groups.

The Orientation Program was restructured by Şişecam Academy in 2017 in order to increase the adaptation and contribution of new employees, to promote the corporate culture, and to create experience sharing platforms.

INTERNATIONAL ENABLER TO FOSTER SUSTAINABILITY

DIGITAL INTELLIGENCE AND COMMUNITY



International Enabler to Foster Sustainability

Şişecam operates on a global level and undertakes leading responsibilities in the industry and its fields.

In the medium and the long-term, it aims to strengthen its position as an international supporter and advocate for sustainability by becoming a role model through its innovative practices, while at the same time converting its employees, local communities, vulnerable groups and supply chain into advocates for this issue.

Meanwhile, \$iṣecam attaches great importance to cooperation in order to create a scale effect in its sphere of influence and to bring into play innovative solutions through common sense. To this end, in order to strengthen its partnerships, \$iṣecam continues to negotiate with industrial organizations, governments, non-governmental organizations, and especially international organizations and universities in addition to its existing memberships. \$iṣecam also strengthens its dialogue with its supply chain, customers and the local community in which it operates.

This year, Şişecam became party to the **UN Global Compact**, pledging to be part of the movement that aims to implement global sustainability principles, take steps to support the goals within the Compact, be a responsible manufacturer and find a solution to global challenges. Şişecam's commitment to the principles in the Compact in parallel with its aim to share its long-established and specialized knowledge with global societies also contributes to its economic, social and environmental sustainability goals.

PARTNERSHIPS

Şişecam continues to reinforce its sustainability partnerships in line with its areas of activity. On the basis of the current objectives of the partnerships, the general sustainability principles are mainly related to strengthening its corporate capacity in specific areas of sustainability, such as life cycle management and its integration into the work process, data management, gender, inclusivity and diversity, and management of natural resources such as water, land and biodiversity. Şişecam supports these goals through the development of meeting plans for supply chains, customers and local communities. The aim is to develop and implement a more detailed partnership plan as the actions related to the strategy emerge.

Şişecam fulfills its mission of becoming an international leader in sustainability and its advocate by strengthening local communities and making contributions to the sector in which it operates. Accordingly, it supports the emergence of new ideas through shared wisdom and aims to contribute to society's capacity building with its partnerships.

Throughout the year, Şişecam has shared its experiences in the industry with its business partners by undertaking the role of host, speaker, active participant or guest in various events, summits and forums held in cooperation with a range of institutions and organizations.

Sisecam builds partnerships with universities and research institutions at home and abroad as part of its research, technologic development and design activities. Likewise, it presents the output of these projects to its stakeholders at international events.

The annual meeting of the International Comission on Glass (ICG), which is the most important platform in the international glass industry, was held together with the 32nd Sisecam Glass Symposium between October 23 and 25, 2017, and hosted by Sisecam.

Meanwhile, the *Glass Science and Technology Master's Program*, initiated with Gebze Technical University in 2016 in order to provide educated human resources for the glass industry, continued to enroll students in 2017. This is a key project in terms of university-industry cooperation, and it is targeted to contribute to the capacity building of young people.

DIVERSITY & INCLUSIVITY

INTERNATIONAL ENABLER TO FOSTER SUSTAINABILITY

DIGITAL INTELLIGENCE AND COMMUNITY

SUPPLY CHAIN MANAGEMENT

Şişecam continuously improves the quality of its products, determines the risks that may arise in the supply chain in a timely manner, and manages them within the framework of international standards through the responsible management of its supply chain.

The social, ethical and environmental performances of Şişecam's suppliers are assessed through audits carried out by Şişecam. Areas open to improvement are determined by Şişecam's approach to sustainability. Local suppliers are preferred to the largest extent possible in order to contribute to the local economy and to grow together with experienced suppliers with whom long-term cooperation is sought.

In addition to long-term cooperation, \$i\secam also provides new suppliers with opportunities to learn and improve together. When choosing a new supplier, a set of criteria such as management system certificates and the demographic structure of its employees are given as much importance as its financial status and the volume of the investment.

Resource management is carried out effectively with the **Supply Chain Cockpit System,** which enables the supply chain costs of Group companies to be identified and is integrated into \$i\$ecam's resource planning. SCOR-based (supply chain operation references) performance metrics are also applied to the Cockpit Platform by the supply chain supervisors at \$i\$ecam. Therefore, benefit is provided in terms of cost reduction, whilst increased and centralized communication within \$i\$ecam decreases the logistics costs.

Şişecam puts an emphasis on the improvement of its employees, supports the transfer of supply chain knowledge, and expects to gain benefits in its business processes. In line with this aim, the Supply Chain School was launched within the Şişecam Academy in 2017.

Şişecam has been participating in the CDP Supply Chain Programs since 2012.



DIVERSITY & INCLUSIVITY

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CORPORATE SOCIAL RESPONSIBILITY

With its sustainability approach and commitment to the UN Sustainable Development Goals, Şişecam's Corporate Social Responsibility Program aims to empower local communities, vulnerable groups and its supply chain through data sharing, capacity building, and conservation practices to increase their inclusivity, increase diversity and ensure active participation in sustainable social, economic and environmental solutions through a multi-sector approach. The prioritized target groups are young people, women, and vulnerable groups.

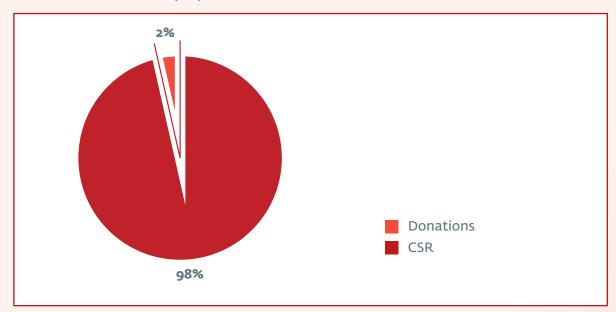
Şişecam continues to support its projects of environmental and natural resource conservation and is raising awareness in this regard at full speed. Şişecam supports the transition to a glass recycling society with the **Glass and Glass Again Project** that continues under a collaboration with ÇEVKO Foundation and local administrations. Glass waste is recycled thanks to both the glass banks provided to municipalities and by educating students on glass recycling.

Sisecam aims to guide young people in particular to participate in sports and supports their personal development with its sports activities. With about 120 sportspeople and its management staff, Sisecam Group Cayırova Sports Club raises young athletes in the fields of sailing, rowing and canoeing. Cayırova Sports Club Canoeing Branch came first, second and third several times in the competitions it joined this year, and two successful sportspeople took their place in the line-up of the national team at the Piestany International Regatta. The Sailing Branch also proved its success by picking up gold, silver and bronze medals in its competitions. Successful athletes at the Sailing Branch have qualified to join the Pirat European Championship that will be held in 2018. Having achieved great success in national and international races, the Rowing Branch has presented three sportspeople to the national team. Amongst the athletes selected for the national team, Ayşenur Yılmaz became the first Turkish female rower to race in the A-Final at the 2016 European Championships.

As in previous years, \$i\$ecam carried out various corporate social responsibility projects this year to contribute to students' education. Within this scope, the Education Incentive Scholarship is given to employees and their children of student age. A three-year apprenticeship training is given at Denizli Glass Factory, and young people aged 16-21, who are supported under the master-apprentice tradition, receive theoretical and practical information. Young people at the Private \$i\$ecam Occupational and Technical Anatolian High School, which was built by \$i\$ecam, are encouraged to gain a profession. Besides this, a protocol has been signed for the construction of Yenişehir \$i\$ecam Occupational and Technical High School.

Information on Sisecam's other Corporate Social Responsibility Projects aimed at creating value by contributing to society is accessible under the headings Heritage, Biodiversity and Waste Management.

Social Investments (TL)





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INTERNATIONAL ENABLER TO
FOSTER SUSTAINABILITY

DIGITAL INTELLIGENCE AND COMMUNITY

Digital Intelligence and Community

New technologies are developing and transforming rapidly, creating new areas of usage every day. The innovative and creative perspectives of \$i\$ecam employees are regularly consulted to ensure the sustainability of the company's leading role in production in the face of the transformations brought about by Industry 4.0. \$i\$ecam sees digitalization as a driving force for social development, and it has been bringing to life new ways of doing business in accordance with the requirements of the current age by integrating technology and the using of big data into all its processes. Thus, in addition to ensuring the integration of information technology within the industry, \$i\$ecam takes firm steps toward continuous development.

Şişecam places great emphasis on the quality and efficient production processes that will be created with smart factories in order to create flexible, dynamic and self-organizing production processes in the context of the 4th Industrial Revolution. Within this scope, a total of 89 ideas were suggested for the entrepreneurship activities performed in IT aimed at the development of innovative ideas, and 22% of the ideas were realized so as to add value to the business units.

As part of the improvements in production processes, development activities regarding stocking and shipment infrastructures were continued, and the implementation of a storage management system using radio-frequency identification (RFID) technology was begun in the factories in Turkey and Bulgaria. Implemented initially in **Flat Glass** and **Glass Packaging** factories, the plan is to eventually include other \$i\timesecam Group Companies within this transition. At **Flat Glass**, infrastructural activities were started for unmanned vehicle logistic glass transfer in warehouses and it is aimed to enable automatic checks in the factory's product warehouses. At **\$i\timesecam Glassware**, \$i\timesecam Document Digital Archive Projects were realized by launching Transport Planning and Ramp Management in the production environment. Furthermore, activities regarding the project design of a sustainable ideal factory were started this year, and are planned to continue in 2018.

Apart from the digitalization of production processes, a performance monitoring and reporting project of about 4,000 computers in Turkey and overseas was realized in Sisecam Group. Thus, performances are monitored through digital data.

The experiences of the production environment, Industry 4.0 and digitalization examples were shared through presentations given at universities, conferences and events.

It is planned to continue digitalization activities in line with the road map to be prepared as part of the Digital Transformation Program. Development of the technological infrastructures required for the Balıkesir Fiber factory, still being established within the smart factory building process, continues. Furthermore, integrated job planning at **Soda Sanayii A.Ş.,** automatic management of construction equipment (forklifts) at **Şişecam Glassware,** transition to a new barcode system at **Glass Packaging,** the implementation of Product Life Cycle Management, and Şişecam Mobile Application Transformation are among the important projects to be included in the production environment in the future.

IMPROVING THE CUSTOMER EXPERIENCE

Şişecam aims to develop new business models, and integrate information and digital technologies into new combinations that will create unparalleled customer experiences. Sişecam makes this aim possible with new products and services.

The Isicam Systems Kumbara Card Club Project, developed by Flat Glass, has served to create awareness in inter-institutional communication, and to establish an efficient and continuous communication network with PVC joinery companies. The Isicam Kiosk Project also aimed to spread the use of energy-saving Isicam products and enable PVC joinery companies to guide customers to suitable products. Within this scope, Isicam Kiosks were installed in the showrooms of 100 PVC joinery companies in 33 provinces, offering easy access to information on a digital platform. As Flat Glass Isicam product group's brand ambassador, Isicik is used in all its communications activities, promotional materials and digital platforms, where he reminds customers of Isicam and its specifications, and offers them the appropriate Isicam Systems for their individual needs. In an effort to offer end users the opportunity to easily and quickly access technical information on and the performance stats of relevant products to be able to choose the right glass for their projects and needs, Flat Glass developed the new mobile apps Isicam Selection Wizard, Glass Acoustics, Glass Consultant and Performance Calculator.

Paşabahçe Stores continue to provide services through online sales in order to offer their customers a better and more effective shopping experience. Many innovations were introduced in 2017 that offer user-friendly functions in the online sales platform. Global e-store and Mobile App projects are planned to be launched in 2018.

DIVERSITY & INCLUSIVITY
INTERNATIONAL ENABLER TO
FOSTER SUSTAINABILITY

DIGITAL INTELLIGENCE AND COMMUNITY

EFFECTIVE CUSTOMER RELATIONS

Şişecam cares about the satisfaction of its customers, who are a part of society and also stakeholders in the Group, and develops itself continuously in order to achieve an effective customer relations management.

All business lines within Şişecam organize Customer Satisfaction Surveys for their own customers, and develop and execute action plans according to the results of survey. Feedback from customers and dealers is used both in the development of new products and services, as well as customer satisfaction activities. Additionally, customer satisfaction, focus group activities, site visits, customer visits and fairs continue to be assessed in factories. All customer complaints made to Group companies in 2017 were responded to and resolved.

At **Flat Glass** and **Glassware, Customer Relations Management (CRM)** is applied which enables processes and technology to be used strategically and efficiently in order to enable an effective Customer Relations Management. The CRM system places customer complaint management into the corporate memory and thus makes every step of the process monitorable. In this way, not only is customer satisfaction increased, the service quality of distributors also becomes measurable. Furthermore, in order to take a more systematic approach to customer relations in **Glassware**, the Marketing and Customer Relations Department was established.



Within the scope of our digital transformation project, \$i\$, ecam Group Companies' corporate websites have been renewed to improve the user experience through integration of the newest technologies. Due to the face-lift given to its brand-new website, \$i\$, ecam was awarded the most prestigious international award platform in the field at the Communicator Awards, held by the Academy of Interactive and Visual Arts.

INFORMATION SECURITY AND CUSTOMER PRIVACY

As a responsible organization striving towards customer satisfaction, Şişecam attaches great importance to the protection of customer data confidentiality. In this respect, it uses the most up-to-date, effective and safe technological infrastructure and provides training to improve employee awareness of data confidentiality.

In order to enable information security, physical servers were virtualized as part of the Sustainability Green Information Technologies. Not only was information security enabled but also paper savings were achieved through secure printing and print-outs.

Issues of common confidentiality and data storage in business contracts with customers are secured in line with ISO 27001 Data Security Management System certification and possible violations are avoided. Efforts to improve digital and cyber security continue, while the Security Route Map 2018-2020 was released as part of system improvements to control access to the database and ensure the security of the data. Şişecam carries out improvement and internal audit activities aimed at the maintenance of information security for the sustainability of the ISO 27001 Information Security Management System. Forty-one employees trained within this scope received the *Internal Examiner Certificate*.

In 2017, there were no cases of violation of customer privacy and no complaints were received at \$isecam.



PROGRESS

Şişecam is committed to PROGRESS through the climateneutral 360° circular model, which includes but not limited to the sustainable use of energy and natural resources, digitalization and innovation, while encouraging and enabling the equal participation of women and vulnerable communities.

Şişecam fulfills its commitment to become an active player in integrating its climate change mitigation efforts and cyclical models into all its activities as part of its PROGRESS approach.

Şişecam's medium and long-term vision is to establish an enabling environment as a champion of corporate heritage and to operate climate-neutral 360° circular models.

Şişecam plans to achieve the following targets by 2022 as part of the PROGRESS approach:



By 2022, reduce GHG emission intensity of glass production by 5% from 2017 baseline



By 2022, reduce annual specific energy consumption in glass production plants by 2%



By 2022, 12 MW energy provided from renewable energy sources



By 2022, at least one additional plant implements reactant pre-heating methodology to reduce natural gas consumption



By 2022, additional 2 plants implemented Waste Heat Recovery system

INTEGRATION OF LOW-CARBON APPROACH
CLIMATE NEUTRAL 360° CIRCULARITY MODEL

An Active Solution Partner for Climate Change

Climate change continues to impact our lives in many ways, from extreme weather to the reduction of natural resources, and such impacts and effects are expected to increase and intensify in the future.

Şişecam believes that climate change, one of the greatest global challenges of our age, can be solved only through effective collaboration networks. Hence why it attaches importance to being an effective solution partner acting in cooperation with individuals, the private sector, public institutions, international institutions and non-governmental organizations.

One of Şişecam's priorities is to manage the risks of climate change in the short and long tern through adjustment and adaptation policies. Şişecam regularly shares its climate change strategy and performance within the scope of the Carbon Disclosure Project in order to disclose its priorities and actions in a transparent way.





Şişecam believes that climate change, one of the greatest global challenges of our age, can be solved only through effective collaboration networks.

INTEGRATION OF LOW-CARBON APPROACH

CLIMATE NEUTRAL 360° CIRCULARITY MODEL

Integration of Low-Carbon Approach

Sisecam works to realize its goal to reduce carbon emissions by managing carbon emissions effectively in all its production plants with the use of renewable energy and energy efficiency projects.

Energy is an important production input for \$i\$, each, which is active in an industry heavily reliant on energy. Due to this fact, \$i\$, ecam constantly evaluates the risks and opportunities related to energy and manages its operations accordingly. In addition to efficiency efforts carried out in order to achieve sustainable use of energy, renewable energy sources are evaluated and integrated into \$i\$, ecam's activities.

Work to determine and implement the roadmap for sustainable energy supply, renewable energy source applications, and energy efficiency projects is carried out by the Şişecam Group Corporate Development and Sustainability Department.

At its production facilities equipped with a Sustainable Energy Measurement Monitoring System (SEÖİS), Şişecam monitors major energy consumption items instantaneously and continues to carry out improvements on process performance.

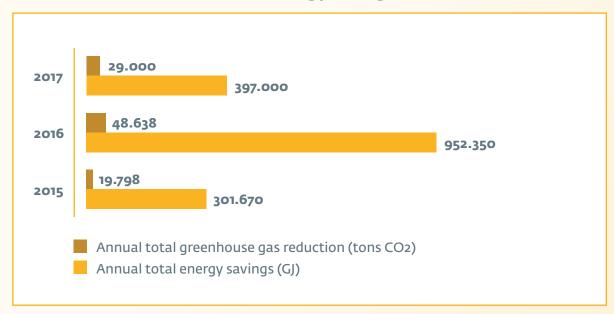
Şişecam has completed energy audits in all its domestic factories as well as in Bulgaria, which are important tools in the evaluation of the energy efficiency performance and have been in progress since 2012. Energy audits continued with the Romanian factory in 2017 as part of spreading the practice. Furthermore, in order to contribute to the energy audit guide prepared for the glass industry, energy audits were performed in two factories in Turkey with the collaboration of the Renewable Energy General Directorate (YEGM) and the United Nations Industrial Development Organization (UNIDO). Şişecam continues its investments into renewable energy by taking advantage of the saving opportunities it has identified as a result of these energy audits.

The 6.2 MW solar energy plant installed on an area of $79,300\text{m}^2$ across the roof of Flat Glass Mersin Factory, ranks 2nd in Turkey and Europe and 10th in the world in terms of installed capacity as an integral roof system. About $38,000\text{m}^2$ of low-iron glass, with its special coating used in the solar panels, was also produced by the company. Preventing about 4,000 tons of CO_2 emissions by generating 28,800 GJ (8 million kWh) of energy with the Solar Energy System, \$i\$, ecam has made an environmental investment of over 4 million TL in three years, including the Solar Energy System installed at the Mersin Factory.

At Şişecam's plants with a high waste heat potential, a total of 15 MW of electric energy was generated and about 5.8 million TL was saved with the Waste Heat Electricity Generation Plant. In addition, savings in heating-related natural gas consumption began accruing thanks to hot water generation. Feasibility activities will continue for waste heat recovery in other suitable plants in 2018.

Overall, though activities targeting energy efficiency, \$i\$ecam has increased its energy savings by about 18% and greenhouse gas emissions have been reduced by around 24% within the last two years. Energy savings made in 2017 led to financial savings worth 17 million TL.

Greenhouse Gas Reduction and Energy Savings



INTEGRATION OF LOW-CARBON APPROACH

CLIMATE NEUTRAL 360° CIRCULARITY MODEL

Climate Neutral 360° Circularity Model

In the medium and the long term, \$i\secam aims to implement climate-neutral 360° circular models into the operations at its factories. In this framework, it continues to make improvements by adopting the best possible technologies and continuously evaluating its performance. Through both its innovative and eco-friendly products and the solutions it develops as part of its processes and products, it develops a 360° circular model that covers after-sale services for end users, as well as its facilities.

TECHNOLOGY AND INNOVATION

Technology and innovation lie at the heart of \$i\$ecam's efforts to implement the circular model. It operates with full awareness of the fact that Research and Technological Development (RTD) efforts are one of the most important components of a company's ability to engage in global competition both currently and the future. It is also an important actor in global competition thanks both to the practices it implements in this framework and its products.



Possessing a total of **53** patents, Şişecam Group has five patent applications and **52** RTD projects in progress.

Şişecam's RTD activities are conducted in close liaison with Şişecam Group's Science and Technology Center and with regional laboratories which function within this structure. The project design process of the RTD activities is conducted within the scope of the Project Suggestion Evaluation and Execution Procedure and a stage-decision mechanism is implemented. Each year, RTD strategies are reviewed through a process actively attended by the Head Department of Research and Technological Development, Development Deputy Chairmen of production groups and Head Department of Strategy. A budget of 57,108,000 TL has been allocated to RTD this year.



Şişecam came first for its Intellectual Property Competency in the Turkish Ministry of Science, Industry and Technology's 2017 Performance Index, which evaluated 144 R&D Centers.



Şişecam Design Center

All of \$i\$ecam's design activities are conducted under the roof of the Design Center, which was put together in 2017. At this new center located within the premises of \$i\$ecam's Science and Technology Center, the aim is that the synergy emerging as a result of the joint work of design and development groups will create surplus value in new product and technology works by strengthening creativity competencies.

Sisecam continues its efforts to develop and apply clean energy solutions, improve the melting technology and production process, and implement burning efficiency projects with projects such as Waste Heat Recovery, Collective Pre-Heating, Broken Glass Pre-Heating, and Oxygen/NG Pre-Heating as part of its R&D activities.

Within this scope, a new technology is being developed at **Glassware Group for the digitalization of centrifugal machines** used to shape glass, in order to increase product quality and production efficiency. A **new drainer** is being designed for products that are challenging to drain using centrifugal machines. The pressing processes of press-blowing machines are conducted with automatic motors, whereby the processing systems are technologically improved, and quality and efficiency are increased. A new machine is being designed to support suitable production conditions to increase the thermal shock resistance of hot beverage glasses.

In order to increase process and product quality in **Soda Sanayii A.Ş.'** chrome products group, existing analysis methods were examined and revised. Laboratory and preliminary experiments are being carried out to develop new leather chemicals. Furthermore, with the RTD **Tankrom AB Production Efficiency Enhancement Project** to improve production processes, the production efficiency of Tankrom AB, the most frequently used basic chromium sulfate (BCS) in the world for leather tanning, was examined and improvements were made. Thanks to the **Tankrom SB Production Process Improvement Project,** a new process was developed that reduces organic impurities **more than international standards.** Also, a method is being developed to enable about a 5% improvement in chromite consumption with methods that will **increase the efficiency of the process of converting chromite minerals,** the most important raw material used at the Kromsan Chromium Compounds Plant, **into a product.**

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INNOVATIVE PRODUCTS

In order to become a solution partner for climate change, Şişecam aims to minimize its energy consumption by developing new, innovative and eco-friendly products that meet the needs of its customer in all areas of activity. In addition to the innovative solutions developed for business processes, Şişecam continues to create value in its area of influence through the new products it develops.

Approximately 30% of energy consumption in Turkey, a country which imports 70% of its energy, takes place in buildings. And approximately 30% of waste energy in these buildings is caused by windows that do not offer insulation. In order to minimize the waste of heat and energy, it is imperative to make buildings more energy-efficient. Within this scope, Flat Glass continues to offer new high performance products, which provide its customers with effective heat insulation and sun control. In addition to meeting safety needs thanks to their temperable nature, compared to regular double-glazing, **Temperable Low-E Glass** also reduces heat waste in winter by 50%, while Temperable Solar Low-E Glass provides, in addition to heat insulation, savings in cooling costs by reducing sunlight reception by 40-65% compared to regular double-glazing. Additionally, Temperable Solar Low-E Glass, which Flat Glass developed especially for the new airport in Istanbul, was awarded the Façade Material of the Year award in the category of Façade Material/System of the Year at the Roof and Façade Awards, organized by Çatı ve Cephe Magazine. Having obtained Environmental Product Declaration (EPD) certificates for its clear glass, clear laminated glass, clear frosted glass, colored line coated glass, clear line coated glass, standard mirror and ecologic mirror product groups, Flat Glass has become the first company in Turkey to obtain EPDs in compliance with the European norm EN 15804.

In the **Glassware Group**, an **induction based Borcam product** using transparent borosilicate glass in induction stoves is being developed **for the first time in the world**. Induction heating is one of the most efficient energy techniques available. Open flame stoves provide around 30-35% efficiency, whereas induction stoves provide about 75%. This year, RTD laboratory experiments on **chemical tempering technology** were completed and its commercial production started. As part of this, glass from Denizli Cam's stem zero line was strengthened by chemical tempering and launched into the market under the brand name Ion Shielding.

Glass Packaging is developing a product that has a non-shattering glass feature when broken with Non-Shattering Coating registered under the name Secura. The coating of the product was made pellucid and its cost was reduced as a result of the works conducted in collaboration with Şişecam Science and Technology Center (BTM).

Projects on chemically tempered reinforced fine glass and glass with high mechanical durability for large area applications were realized for use in the **automotive** industry.

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PERFORMANCE INDICATORS

Environmental Performance Indicators

Energy Consumption (GJ)	2017
Natural Gas	39.732.028
Electricity	3.613.170
LPG	17.768
Acetylene	3.534
Anthracite/Coal	12.100.707
Other	50.910
Total	55.518.117

Green House Gas Emissions -GHGs (ton CO2)	2017
SCOPE 1	3.849.735

	2015	2016	2017
Total GHG reduction (Tons CO2)	19.798	48.638	29.000

Air emissions (kg)	2015	2016	2017
NOx	10.426.825	9.475.242	13.059.661
SOx	6.680.700	4.005.326	1.461.565

Energy Savings	2015	2016	2017
Total Energy Savings (GJ)	301.670	952.350	355.854
Total Energy Savings (TL)	5.856.633	10.638.442	16.750.544

	2015	2016	2017
Environmental Investments and Expenditures (TL)	25.805.496	34.007.779	35.002.640

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Water consumption (m³)	2015	2016	2017
Municipal Water	1.436.606	1.460.131	1.886.673
Surface Water (Lake, Sea, Oceans etc.)	13.363.120	10.956.643	12.606.545
Ground water	13.596.893	14.887.375	13.806.042
Other	58.397	51.00	229.632
TOTAL	28.455.016	27.355.149	28.528.892

2015

1.923.490

9.058.605

Amount of Recycled/Reused Water (m³)

Amount of Water Discharge (m³)

2016

2.146.758

7.866.735

2017	
2.608.097	
8.083.879	

Amount of Waste (ton)	2015	2016	2017
Amount of Hazardous Waste (sewage sludge etc.)	4.700	7.400	7.150
Sent to Landfill	1.039.293	904.811	1.165.691
Recycled (paper, plastics, glass etc.)	47.366	45.119	78.541
Recovered for energy (waste vegetable oil etc.)	1.006	1.572	1.150
TOTAL	1.092.365	958.902	1.252.532

	2015	2016	2017
Reused cullet in production (ton)	387.627	461.154	499.464

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Economic Performance Indicators

Operational and Financial Data (thousand TL)	2015	2016	2017
Total revenue	7.415.128.590	8.569.464.000	11.318.494.750
Operating costs	6.692.115.483	7.823.712.292	10.092.625.889
Community investments	249.922	2.393.708	449.111
Investments made to support local infrastructure or local public services	152.259	2.082.302	334.520
Economic value retained	722.763.185	743.358.000	1.225.419.750

Social Performance Indicators

Number of Employees	2015				2017	
Number of Employees	Female	Male	Female	Male	Female	Male
Total number of employees	1.076	9.346	1.036	9.733	2.300	11.855

Number of employees by category	20	15	20	16	2017	
Number of employees by category	Female	Male	Female	Male	Female	Male
White collar	1.073	3.050	1.032	3.116	1.285	3.521
Blue collar	3	5.829	4	6.201	1.015	7.924
Number of Employees under collective labor agreements	3	6.088	3	5.119	670	7.279

Number of employees by	20	115	20	16	2017		
contract type	Uncont.	Cont.	Uncont.	Cont.	Uncont.	Cont.	
Total number of employees	10.419	3	10.764	5	14.124	32	
White collar	4.133	3	4.143	5	4.778	27	
Blue collar	6.286	0	6.621	0	9.344	5	

	2015		20	16	2017	
	Full time	Part time	Full time	Part time	Full time	Part time
Number of Subcontracted employees	2.416	108	2.449	138	3.835	383

Employees by age	20	015	20	16	2017		
Employees by age	Female	Male	Female	Male	Female	Male	
New employee hires	206	636	102	692	131	628	
Over 50 years	0	2	0	17	1	6	
Between 30-50 years	59	159	40	187	41	185	
Below 30 years	147	475	62	488	89	437	

Faralous humanus mate	20	15	20	2016 2017		
Employee turnover rate	Female	Male	Female	Male	Female	Male
Number of employees who left work	157	829	144	684	359	1.186
Over 50 years	12	92	9	116	30	145
Between 30-50 years	78	513	85	423	181	667
Below 30 years	67	224	50	145	150	374

Number of ampleyons by your	20	15	20	16	2017	
Number of employees by year	Female	Male	Female	Male	Female	Male
o-5 years	583	3.130	571	3.091	1.436	4.322
5-10 years	220	2.802	186	2.720	437	2.418
10 years and over	315	4.246	321	4.799	591	5.865

	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Number of employees entitled to parental leave	44	202	50	159	111	110
Number of employees returned to work after parental leave ended	40	141	40	122	83	108

Average hours of training per	20	015	20	16	2017		
employee (Total hours of training /number of employees)	Female	Male	Female	Male	Female	Male	
Total hours	4422	52693	5232	58943	7222	51510	
Blue Collar	110	34281	243	35551	1821	27058	
White Collar	4421	18463	5228	23460	7189	24545	

Doufourness Monocomout	20	15	20	16	2017		
Performance Management	Female	Male	Female	Male	Female	Male	
Total number of employees who received regular performance and career development evaluations	1512	4973	1456	5137	1783	5385	

	20	15	20	16	2017	
Diversity and equal opportunity	Female	Male	Female	Male	Female	Male
Number of employees in top management bodies	13	61	18	57	80	149
Over age 50	0	3	0	5	34	11
Ages between 30-50	10	45	17	39	38	99
Under age 30	3	13	1	13	8	39
Number of employees in Board of Directors	10	27	8	28	10	35
Number of disabled em-ployees	17	270	18	280	29	335

OHS Data	20	015	2016		2017			
Ons Data	Female	Male	Female	Male	Female	Male		
Employees of Şişecam	Employees of Şişecam							
Number of accidents	-	583	-	533	-	457		
Absentee rate	-	7.920	-	8.966	-	7.576		
Injury rate (IR)	-	32	-	26	-	22		
Lost day rate (LDR)	-	431	-	432	-	359		
Subcontracted employees								
Number of accidents in subcontractors	-	114	-	146	-	105		
Injury rate in subcontractors (IR)	-	23	-	26	-	19		

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GRI CONTENT INDEX





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	102-45	2	-
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	102-47	15	-
	102-48	None.	-
	102-49	10-11	-
	102-50	2	-
	102-51	http://www.sisecam. com.tr/sites/catalogs/en/ Documents/sustainabil-ity/ sisecamsustainabilityreport_2016. pdf	-
	102-52	Annual reporting	-
	102-53	2	-
	102-54	2	-
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