# C1. Governance

## C1.1

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

Yes

## C1.1a

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

| Position of individual(s) | Please explain |
|---|---|
| Chief Executive Officer (CEO) | -Defining policies on institutional sustainability principles and climate change<br>-Defining annual strategic objectives about sustainability and climate change issues |
| | -Reviewing monthly objectives<br>-Assesing of climate-related risks and opportunities that will affect business continuity<br>-Encouraging participation and cooperation with NGOs, public enterprises, industry organizations.<br>-Monitoring development of company sustainability studies |

## C1.1b

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

| Frequency with which climate-related issues are a scheduled agenda item | Governance mechanisms into which climate-related issues are integrated | Please explain |
|---|---|---|
| Scheduled – some meetings | Reviewing and guiding strategy<br>Reviewing and guiding major plans of action<br>Reviewing and guiding risk management policies<br>Reviewing and guiding annual budgets<br>Reviewing and guiding business plans<br>Setting performance objectives<br>Monitoring implementation and performance of objectives<br>Monitoring and overseeing progress against goals and targets for addressing climate-related issues | -Reviewing of six-monthly strategical targets, including fight against climate change subjects,<br>-Monitoring progress against goals and targets about sustainability issues in the annual Management Review Meetings,<br>-Reviewing monthly the reports that are prepared by Management Systems and Sustainability Department,<br>-Annual reporting to Board of Directors and quarterly reporting to Executive Board about overseeing progress against goals and targets for addressing climate-related issues. |

## C1.3

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

Yes

## C1.3a

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

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**Who is entitled to benefit from these incentives?**

All employees

**Types of incentives**

Monetary reward

**Activity incentivized**

Efficiency project

**Comment**

By means of our Proposal System, we support our employees continually to contribute to the management, business processes, productivity of the company and to customer benefit; and to offer creative suggestions in order to carry out safe, efficient and environmentally friendly production and services. Each individual, regardless of their status and duty, individually or as a department/group, can fill in the "I Have a Proposal Form" and make a suggestion to the management. The suggestions which cover the subjects of improving the quality and the processes, health, safety, environment-energy, customer satisfaction, the company productivity, brand awareness, employee satisfaction, are evaluated regularly by the Proposal Evaluation Committee Polisan Holding evaluates these proposals and the successful projects that apply to have an award through Rewarding Mechanism in which a scoring system is followed. -Scoring for Non-Profit Proposals Evaluation: The

proposal is evaluated and scored according to the following headings: quality improvement and process improvement, health, safety, environment and energy, employee satisfaction and customer satisfaction; most of which have impact on Holding's direct and indirect climate change impacts. -Scoring for Financially Profitable Proposals Evaluation: All proposals that are applicable in the financial year with all kinds of financial incentives that can provide turnover, revenue increase, reduction of costs and expenses are assessed by Financial Control Department. The revenue calculations are made on the remaining amount after deducting the investment and application costs over the annual return. -Rewarding: Twice a year, the Evaluation Committee submits non-profit proposals with high points, profitable proposals and special projects to the Executive Board. The prize is determined by the Executive Board, and if the proposal is submitted in groups, the prize is shared equally among the group members.

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**Who is entitled to benefit from these incentives?**

All employees

**Types of incentives**

Monetary reward

**Activity incentivized**

Efficiency target

**Comment**

Strategic targets, including the issue of combating climate change for the next year, are set by senior management in November every year. In January, in order to realize the strategic targets, the process leaders of the relevant upper process are entered into the system (EBA Target Operating Process) by determining the actions, responsibilities and terms planned to be achieved. The actions set to achieve the process goals are input for the performance evaluation system where the employee's potential, talent, on-the-job behavior and other business-related skills are measured.

Monitoring, feedback, referral stages, target realization levels are constantly monitored and revisions, support and guidance are made every six months. At the end of the year, the determination of the extent to which the targets are realized and the evaluation are carried out. The rate of increase in wages is determined according to the actualization of the actions taken to achieve the strategic objectives and the result of the competence assessment.

# C2. Risks and opportunities

## C2.2c

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

| | Relevance & inclusion | Please explain |
|---|---|---|
| Current regulation | Relevant, always included | 1. Industrial and power generation facilities have to control their emissions as a result of their activities as required by the Regulation on Control of Industrial Air Pollution published in the Official Gazette dated 3/7/2009 and numbered 27277. In periods determined by the Regulation, companies are required to measure their emissions and result of measurement stay below the legal limit established.<br>2. The Regulation Concerning Monitoring of Greenhouse Gas Emissions has recently been issued by the Turkish Ministry of Environment and Urbanism. It is generally based on the United Nations Framework Convention on Climate Change and the Kyoto Protocol, which was ratified by the Turkish Parliament in 2009 with Law No. 5836. The Regulation aims to set the principles and procedures related to monitoring, reporting and verification of GHGs resulting from organizational |
| Emerging regulation | Relevant, sometimes included | 1. In Paris COP21, Turkey signed the Paris Agreement and submit its Intended Nationally Determined Contributions (INDC) plan to the UN Secretariat, in which Turkey sets an intended target is to reduce 21% of its emissions by 2030. Plans and policies to be implemented for Turkey's INDC plan covers energy, industrial processes, transport, buildings and urban transformation, agriculture, waste and forestry topics. As the main focus is on energy efficiency, the companies may need to purchase energy from renewable energy suppliers and also take energy efficiency related actions to decrease their energy related carbon impacts.<br>2. In line with Turkey's INDC plan to reduce its emissions by 2030 and possible changes in flue gas regulations in the future, the industries need to be always prepared for reduction targets. In both cases, the companies may be required to adapt in a short period of time and fully comply with targets. In order to meet these targets, implementation of additional activities, technologies, equipment etc. will arise; hence additional cost and investments will be required.<br>3. The Energy Efficiency Law, adopted in 2007, set forth measures for energy efficiency in energy generation, transmission, distribution and consumption phases at industrial establishments, buildings, power generation plants, transmission and distribution networks and transport. In addition, energy efficiency strategy of Turkey is to decrease energy intensity by at least 20% by the year 2023. Its strategic purposes are mainly reduce energy intensity and energy losses in industry and services sectors. In line with these developments, possible legal requirements related to energy may cause increase in operational cost. In addition, Turkey is foreign-dependent in energy, both electricity and natural gas, hence any regulatory uncertainty or financial fluctuation in energy at global scale would strongly affect operations in Turkey.<br>4. Future regulations on carbon taxes and the uncertainty of the carbon price will increase operational cost. |
| Technology | Relevant, sometimes included | 1. In Turkey, there are two main regulations in effect used for determining the energy requirements of buildings. The first one, Energy Performance Regulation in Buildings (01/04/2010.Official gazette of Turkish republic. Number:27075) proposes the calculation of instantaneous solar radiation on building surfaces while determining the building's energy needs. The second one, The National Standard of Thermal Insulation Requirements for Buildings (TS 825) is mandatory and widely used for calculating heating energy needs of buildings. Any construction product that is not providing energy efficiency in line with these two standards will lead to decrease in demand.<br>2. Turkish Environmental Friendly Product Labeling, Green Building Certification Systems and Environmental Product Declaration System are new but rapidly emerging topics in Turkey. Lack of products compliant with these certifications and systems, may cause reduced demand for produced goods. |

## C2.3a

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

**Identifier**

Risk 1

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Policy and legal: Mandates on and regulation of existing products and services

**Type of financial impact**

Increased costs and/or reduced demand for products and services resulting from fines and judgments

**Company- specific description**

Industrial and power generation facilities have to control their emissions as a result of their activities as required by the Regulation on Control of Industrial Air Pollution published in the Official Gazette dated 3/7/2009 and numbered 27277. In periods determined by the Regulation, companies are required to measure their emissions and result of measurement stay below the legal limit established.

**Time horizon**

Current

**Likelihood**

Exceptionally unlikely

**Magnitude of impact**

Medium-high

**Management method**

In order to monitor and evaluate legislation and requirements as quickly and effectively as possible, Company prepared Polisan's website "PoliMevzuat". It is established a system in which permissions, licenses, documents and reports are managed by the process owners so that 100% compliance to legal obligations and other conditions can be maintained more reliably. In order to be below the limit values stated in the related flue gas laws and regulations, Polisan Holding is preparing for possible limit reductions with internal targets and making improvements in possible emission sources.

SEVESO and Closed-Loop Chemical Loading and Unloading Projects for Tank to Tank, Tanker to Tank, Ship to Tank Operations
Inspections of 37 tanks were completed in 2018 and maintenance activities are being carried out based on the results of the inspections. 2 tanks have been refurbished, while installation work of 4 tanks continues. We are continuing to do the necessary preparations for sealed loading operations.

**Identifier**

Risk 2

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Policy and legal: Mandates on and regulation of existing products and services

**Type of financial impact**

Increased costs and/or reduced demand for products and services resulting from fines and judgments

**Company- specific description**

The Regulation Concerning Monitoring of Greenhouse Gas Emissions has recently been issued by the Turkish Ministry of Environment and Urbanism. It is generally based on the United Nations Framework Convention on Climate Change and the Kyoto Protocol, which was ratified by the Turkish Parliament in 2009 with Law No. 5836. The Regulation aims to set the principles and procedures related to monitoring, reporting and verification of GHGs resulting from organizational activities listed in Annex I of the by-law. Every year, approved GHG emission reports need to be prepared and sent to the Ministry.

**Time horizon**

Current

**Likelihood**

Very unlikely

**Magnitude of impact**

Medium

**Management method**

Polisan Holding reports GHG emissions of Polisan Kimya and sent the GHG Monitoring Plan to the Ministry which already are accepted. The 2018 GHG report were been audited and verified by a licensed auditor company in April 2019. In addition, Polisan Holding has been internally calculating its greenhouse gas emissions originated from organizational activities since 2012 and shares its values with the stakeholders through sustainability reports. ISO 14064-1 Standard Polisan Holding 2017 Corporate Greenhouse Gas Inventory Report will be foreseen to be audited and verified by licensed auditor company in 2018.

**Identifier**

Risk 3

**Where in the value chain does the risk driver occur?**

Customer

**Risk type**

Transition risk

**Primary climate-related risk driver**

Technology: Unsuccessful investment in new technologies

**Type of financial impact**

Reduced demand for products and services

**Company- specific description**

In Turkey, there are two main regulations in effect used for determining the energy requirements of buildings. The first one, Energy Performance Regulation in Buildings (01/04/2010.Official gazette of Turkish Republic Number: 27075) proposes the calculation of instantaneous solar radiation on building surfaces while determining the building's energy needs. The second one, The National Standard of Thermal Insulation Requirements for Buildings (TS 825) is mandatory and widely used for calculating heating energy needs of buildings. Any construction product that is not providing energy efficiency in line with these two standards will lead to decrease in demand.

**Time horizon**

Current

**Likelihood**

Very likely

**Magnitude of impact**

Medium-high

**Management method**

Polisan Kansai Boya is always working to improve the heat reflecting and heat insulation capabilities of the raw materials used in our thermal insulation products. Taking into account the heat and humidity conditions in each region of Turkey, a lot of R and D have been conducted to develop region specific insulation materials. Polisan Exelans Energy Heat Insulation Laths and Package Systems provide a lasting performance without losing technical values over time.

Polisan has been in the insulation market with Exelans Energy product since 2007 and about 25 000 buildings have been introduced to the Exelans Energy quality so far. Polisan has integrated its product quality with its service quality through "Insulation Insurance", which it has improved most recently. Moreover, in order to increase customer satisfaction and as a promotion, it is provided "Energy Performance Certificate" for 18,440 houses. This certificate became a legal requirement in existing buildings since January 2011 and it classifies the energy consumption and greenhouse gas emissions of buildings per usage area per year. In this way, company ensured that customers knew the efficiency of their insulation, their heating and cooling systems, minimum energy requirement and energy consumption of their building. In addition, ensuring an energy saving of close to 10% with its high-grade heat insulation ratio, the Exelans Energy Turbo Heat Insulation Package, offered in 2016, continues its sales growth in 2018.

Risk 4

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Policy and legal: Mandates on and regulation of existing products and services

**Type of financial impact**

Increased costs and/or reduced demand for products and services resulting from fines and judgments

**Company- specific description**

Under the 2014/2 Kocaeli Governorship Mandate on 'the Storage, Discharge and Transportation of Chemicals', closed circuit filling in related chemical storage tanks have to conducted.

**Time horizon**

Current

**Likelihood**

Very likely

**Magnitude of impact**

Medium-high

**Management method**

Under the 2014/2 Kocaeli Governorship Mandate on 'the Storage, Discharge and Transportation of Chemicals', closed circuit filling project in acrylate storage tanks was performed. With this project, an increase in degassing capacity was also achieved. In 2015, projects have carried out to introduce closed circuit loading/ unloading of trucks, increased the number of tanks that this system is implemented to 38 and projects are continued to work on to increase this number. The toluene tank in Polisan Kansai Boya's raw material tank area is made suitable for closed filling system. In this regard, company have eliminated the volatile organic compound (VOC) emissions that were generated during filling, discharging and operation of the tank, and treatment the evaporative emissions of the tank at rest.

SEVESO and Closed-Loop Chemical Loading and Unloading Projects for Tank to Tank, Tanker to Tank, Ship to Tank Operations:

Inspections of 37 tanks were completed in 2018 and maintenance activities are being carried out based on the results of the inspections. 2 tanks have been refurbished, while installation work of 4 tanks continues. We are continuing to do the necessary preparations for sealed loading operations.

**Identifier**

Risk 5

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Policy and legal: Mandates on and regulation of existing products and services

**Type of financial impact**

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

**Company- specific description**

In Paris COP21, Turkey signed the Paris Agreement and submit its Intended Nationally Determined Contributions (INDC) plan to the UN Secretariat, in which Turkey sets an intended target is to reduce 21% of its emissions by 2030. Plans and policies to be implemented for Turkey's INDC plan covers energy, industrial processes, transport, buildings and urban transformation, agriculture, waste and forestry topics. As the main focus is on energy efficiency, the companies may need to purchase energy from renewable energy suppliers and also take energy efficiency related actions to decrease their energy related carbon impacts.

**Time horizon**

Medium-term

**Likelihood**

Very likely

**Magnitude of impact**

Medium-high

**Management method**

The Polisan Holding group companies are located at Dilovası Industrial Zone and have to purchase electricity from that industrial zone. As choosing their electricity supplier is not a valid option, the companies give great importance on efficient energy use. Within the ISO 50001 energy management system, Holding companies regularly monitor and asses energy consumption. The Holding pursues a procurement policy for equipment with low energy consumption. Polisan Kimya, with newly established Silver Catalyzed Formaldehyde Production Facility and the technological improvements in Molybdenum Catalyzed Formaldehyde Facility, achieved approximately 1 million kWh of energy savings per year. Holding provide 112,016 kWh of energy savings in 2018 with the elimination of air leaks detected from hoses, pipe fittings, quick couplers, filters and valves. Polisan Kimya will provide 114,840 kWh of energy savings per year via the replacement with new generation compressor. Polisan Kansai Boya will provide 1.407.340 kWh of energy savings per year via the cooling system which have a special automation system following the outdoor air temperature and also with LED lighting systems in GEBKİM. Polisan Kansai Boya will provide 72.640 m3 of natural gas savings per year via the implementing in high efficiency condensing boiler system with economizer system in and also with compressor waste heat system application GEBKİM. It is obtained 30% higher efficiency in energy modelling for GEBKİM Facility.

**Identifier**

Risk 6

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Policy and legal: Mandates on and regulation of existing products and services

**Type of financial impact**

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

**Company- specific description**

In line with Turkey's INDC plan to reduce its emissions by 2030 and possible changes in flue gas regulations in the future, the industries need to be always prepared for reduction targets. In both cases, the companies may be required to adapt in a short period of time and fully comply with targets. In order to meet these targets, implementation of additional activities, technologies, equipment etc. will arise; hence additional cost and investments will be required.

### Management method

In order to monitor and evaluate our legislation and requirements as quickly and effectively as possible, we prepared Polisan's website "PoliMevzuat". We established a system in which permissions, licenses, documents and reports are managed by the process owners so that our 100% compliance to legal obligations and other conditions can be maintained more reliably. In order to be below the limit values stated in the related flue gas laws and regulations, we are preparing for possible limit reductions with internal targets and making improvements in possible emission sources. We have treatment systems at 18 emission points. Our targets include flue scrubbers and bio-filter projects:
-The toluene tank in our raw material tank area is made suitable for closed filling system. In this regard, we have eliminated the volatile organic compound (VOC) emissions that were generated during filling, discharging and operation of the tank, and treatment the evaporative emissions

### Identifier

Risk 7

### Where in the value chain does the risk driver occur?

Direct operations

### Risk type

Transition risk

### Primary climate-related risk driver

Policy and legal: Mandates on and regulation of existing products and services

### Type of financial impact

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

### Company- specific description

The Energy Efficiency Law, adopted in 2007, set forth measures for energy efficiency in energy generation, transmission, distribution and consumption phases at industrial establishments, buildings, power generation plants, transmission and distribution networks and transport. In addition, energy efficiency strategy of Turkey is to decrease energy intensity by at least 20% by the year 2023. Its strategic purposes are mainly reduce energy intensity and energy losses in industry and services sectors. In line with these developments, possible legal requirements related to energy may cause increase in operational cost. In addition, Turkey is foreign-dependent in energy, both electricity and natural gas, hence any regulatory uncertainty or financial fluctuation in energy at global scale would strongly affect operations in Turkey.

### Time horizon

Short-term

### Likelihood

Very likely

### Magnitude of impact

Medium

### Management method

In addition to efficient energy use and consumption reduction projects within Holding Companies, with the establishment of new manufacturing plant for Polisan Kansai Boya at Gebkim (Gebze Organized Industrial Zone for Chemical Sector) with LEED certification, lower energy intensity is aimed in our operations. Projects within this scope; High Efficiency Water Cooled Chiller Project: In this project, the Vented Type Chiller System was used together with the Free Cooling System, and the process water was cooled down in the house by utilizing the low outside air temperature. With cooling system, company will save about 916,300 kWh of electricity per year and prevent 405,004 kg $CO_2$ emissions. Hot Water Boiler Economizer Project: Company will apply in high efficiency condensing boiler system, the boiler return water will be preheat from the waste heat in the flue gas with the economizer system. This will save 8200 m3 of natural gas per year and prevent 15,920 kg $CO_2$ emissions. Compressor Waste Heat Project: Company will make use of the energy generated by application of the compressor waste heat system and the use of screw air compressors in enterprises. This will save 64,440 m3 of natural gas per year and prevent 114,500 kg $CO_2$ emissions. LED Lighting Usage: All lighting in the factory and offices will be provided with LED system. This will save 491,040 kWh of electricity and 217,039 kg $CO_2$ emissions will be avoided.

Risk 8

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Technology: Costs to transition to lower emissions technology

**Type of financial impact**

Costs to adopt/deploy new practices and processes

**Company- specific description**

Future regulations on carbon taxes and the uncertainty of the carbon price will increase operational cost.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

**Management method**

Polisan Holding closely follows developments in carbon pricing in Turkey and performs emission reduction projects to be prepared for possible taxation. Carbon taxes future regulations on carbon taxes and the uncertainty of the carbon price will increase operational cost. Company engage with stakeholders, including research centers and sectorial associations and put efforts for Climate Change Management. In addition, Polisan Holding continuously work on energy and emission efficiency projects in their operations. Costs related to consultancy in energy audits is integrated in the budget.

Polisan Holding Were Granted the "Low Carbon Hero" Award
Holding's performance was granted the award in the category of "Journey of Sustainability in Global Standards for Fighting Against Climate Change" in the 5th İstanbul Carbon Summit which is organized by the Sustainable Production and Consumption Association to award institution that implement carbon management in production and consumption and make efforts for a low carbon economy.

**Identifier**

Risk 9

**Where in the value chain does the risk driver occur?**

Customer

**Risk type**

Transition risk

**Primary climate-related risk driver**

Market: Changing customer behavior

**Type of financial impact**

Reduced demand for goods and/or services due to shift in consumer preferences

**Company- specific description**

Turkish Environmental Friendly Product Labeling, Green Building Certification Systems and Environmental Product Declaration System are new but rapidly emerging topics in Turkey. Lack of products compliant with these certifications and systems, may cause reduced demand for produced goods

**Time horizon**

Short-term

**Likelihood**

Likely

**Magnitude of impact**

Medium-high

**Management method**

Polisan Kansai Boya already have environmental product declarations (EPDs) in which the environmental performance of paint products (2 indoor 2 outdoor paints) are declared. Company plans to widen range of products with EPDs with Polisan Kimya construction chemicals. R&D studies also are carried out on developing products with environmental labels.

Polisan Kansai Boya also aims to prepare a project for the renewal of existing EPD's evaluating the environmental dimensions of products at the new paint factory for 2019.

EU Eco-labelling Project
Polisan Holding aimed to carry out a project to receive a Type 1 EU Eco-label for one existing product decided upon by Polisan Kansai Boya R&D and Product Managers in 2018 and works began a minimum of 6 months after the new plant starts operating further to the preliminary condition of the project. Also Holding aims to create inventory data for a compliance assessment based on 6 criteria and 11 sub-criteria; to present substantiating documents to competent authorities for 2019.

**Identifier**

Risk 10

**Where in the value chain does the risk driver occur?**

Customer

**Risk type**

Transition risk

**Primary climate-related risk driver**

Reputation: Shifts in consumer preferences

**Type of financial impact**

Reduced revenue from decreased demand for goods/services

**Company- specific description**

Polisan Holding regularly share their corporate carbon footprint reports with their stakeholders. Increasing the carbon footprint is a potential risk factor for company.

**Time horizon**

Current

**Likelihood**

Unlikely

**Magnitude of impact**

Low

**Management method**

The Holding pursues a procurement policy for equipment with low energy consumption. In addition, efficient energy use and consumption reduction projects within Holding Companies are implemented. Projects: Polisan Kimya, with newly established Silver Catalyzed Formaldehyde Production Facility and the technological improvements in Molybdenum Catalyzed Formaldehyde Facility, achieved approximately 1 million kWh of energy savings per year. Polisan Holding provide 192,021 kWh of energy savings per year with the elimination of air leaks detected from hoses, pipe fittings, quick couplers, filters and valves and also with the transition to LED system in Dilovasi. Polisan Kimya will provide 114,840 kWh of energy savings per year via the replacement with new generation compressor. Polisan Kansai Boya will provide 1.407.340 kWh of energy savings per year via the cooling system which have a special automation system following the outdoor air temperature and also with LED lighting systems in GEBKİM .Polisan Kansai Boya will provide 72.640 m3 of natural gas savings per year via the implementing in high efficiency condensing boiler system with economizer system in and also with compressor waste heat system application GEBKİM .

**Identifier**

Risk 12

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Reputation: Increased stakeholder concern or negative stakeholder feedback

**Type of financial impact**

Reduced revenue from decreased demand for goods/services

**Company- specific description**

It will negatively affect our reputation in case of failure to comply with legal regulations.

**Time horizon**

Current

**Likelihood**

Unlikely

**Magnitude of impact**

Medium

**Management method**

In order to monitor and evaluate legislation and requirements as quickly and effectively as possible, Polisan Holding prepared "PoliMevzuat" website. The system was established in which permissions, licenses, documents and reports are managed by the process owners so that 100% compliance to legal obligations and other conditions can be maintained more reliably.

**Identifier**

Risk 13

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Physical risk

**Primary climate-related risk driver**

Chronic: Rising sea levels

**Type of financial impact**

Increased capital costs (e.g., damage to facilities)

**Company- specific description**

Polisan Holding is located near the sea and creek bed of the Dilovasi settlement. Weather events such as floods and overflows can lead to loss of product and raw materials, and stop of operations.

**Time horizon**

Long-term

**Likelihood**

Likely

**Magnitude of impact**

Medium-high

**Management method**

For Poliport Kimya, a dock between the terminal and the port quay will be constructed . With this project, the plants will be above sea level and will maintain operation continuity. In addition, at Poliport Kimya, sets around tank farms and drainage systems prevents flooding in these areas.

**Identifier**

Risk 14

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Physical risk

**Primary climate-related risk driver**

Chronic: Rising mean temperatures

**Type of financial impact**

Increased operating costs (e.g., inadequate water supply for hydroelectric plants or to cool nuclear and fossil fuel plants)

**Company- specific description**

Heated and/or refrigerated tanks and lines are used in operations at Polisan Kansai Boya, Poliport Kimya and Polisan Kimya. Increase in average mean temperature will increase the energy need for cooling hence in operational cost. In addition, seawater is used for cooling purposes. Increase in seawater temperature will also cause increase in energy consumption and therefore operational cost.

**Time horizon**

Long-term

**Likelihood**

Very likely

**Magnitude of impact**

High

**Management method**

The actions that would be taken against changes in main temperature are closely related to energy saving projects. In that context, as mentioned above statements, Holding companies gives great importance on energy efficiency and within the ISO 50001 energy management system and with the help of established energy committees, Holding regularly monitors, tracks and takes actions on energy related operations, and always aims for improvement.

**Identifier**

Risk 15

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Physical risk

**Primary climate-related risk driver**

Chronic: Changes in precipitation patterns and extreme variability in weather patterns

**Type of financial impact**

Increased operating costs (e.g., inadequate water supply for hydroelectric plants or to cool nuclear and fossil fuel plants)

**Company- specific description**

At Polisan Holding, seawater, well water and municipal water are used in operations. As a consequence of climate change, the water scarcity would lead to increase in operational cost to treat sea water and consequently failure of business continuity.

**Management method**

Polisan Holding is already using seawater in its operations by treating it with reverse osmosis process. In case of a potential water scarcity problem in wells and municipal water systems, thanks to the existing reverse osmosis system, seawater can replace these resources and maintain operational continuity. In future, capacity increase in this system may be needed which will cause higher operational cost and new investment. In addition, as a precaution against water scarcity, Municipal Water Directorates plan projects for the improvement of existing systems, the development of new systems, rainwater harvesting and the reuse of grey waters for the reuse of treated municipal wastewater.

Also Polisan had water footprint calculation performed in accordance with the methodology developed by the Water Footprint Network to indicate the sustainability, efficiency, and equitability of our water use in 2018.

LEED Green Building Applications of GEBKİM Facility

Under the Water Efficiency category of certificate:

- Polisan realized a 75% water savings in the building and 100% water savings in landscaping.
- Polisan collect rainwater falling on the field and filter and use it.
- Polisan used native and adapted plants with low water need for landscaping; Polisan meet their irrigation water need with rainwater via a drip irrigation system.

**Identifier**

Risk 16

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Technology: Costs to transition to lower emissions technology

**Type of financial impact**

Costs to adopt/deploy new practices and processes

**Company- specific description**

Approximately 49% of the carbon footprint of Polisan Holding companies is electricity consumed. 70% of the electricity consumption in Turkey is provided by fossil fuels. If there is no increase in the efficiency of the electrical equipment in operations depending on the need for electricity consumption, the electricity consumption per unit product and therefore the carbon footprint will increase. This will also lead to an increase in operational costs.

**Time horizon**

Current

**Likelihood**

Very likely

**Magnitude of impact**

Medium

**Management method**

The Holding pursues a procurement policy for equipment with low energy consumption. In addition, efficient energy use and consumption reduction projects within Holding Companies are implemented. Projects: Polisan Kimya, with newly established Silver Catalyzed Formaldehyde Production Facility and the technological improvements in Molybdenum Catalyzed Formaldehyde Facility, achieved approximately 1 million kWh of energy savings per year. Polisan Holding provide 192,021 kWh of energy savings per year with the elimination of air leaks detected from hoses, pipe fittings, quick couplers, filters and valves and also with the transition to LED system in our sites in Dilovasi. Polisan Kimya will provide 114,840 kWh of energy savings per year via the replacement with new generation compressor. Polisan Kansai Boya will provide 1.407.340 kWh of energy savings per year via the cooling system which have a special automation system following the outdoor air temperature and also with LED lighting systems in GEBKİM. Polisan Kansai Boya will provide 72.640 m3 of natural gas savings per year via the implementing in high efficiency condensing boiler system with economizer system in and also with compressor waste heat system application GEBKİM .

**Identifier**

Risk 17

**Where in the value chain does the risk driver occur?**

Supply chain

**Risk type**

Transition risk

**Primary climate-related risk driver**

Technology: Substitution of existing products and services with lower emissions options

**Type of financial impact**

Research and development (R&D) expenditures in new and alternative technologies

**Company- specific description**

Due to the increase in the carbon footprint of the supplied raw materials, Polisan Holding's scope-3 emission will increase.

**Time horizon**

Current

**Likelihood**

Likely

**Magnitude of impact**

Medium

**Management method**

With the aim of reducing total volatile organic compounds (TVOCs) and formaldehyde emissions, Polisan Kimya have also developed a product called POLFEN BİO MP, which aims to develop a product that considers the environment and human health. The use of bio-based raw materials in PCE production has resulted in both price reduction and reduction of petroleum-derived polymers,resulting in an environmentally friendly and high-performance product.

And in 2016, Polisan Kansai Boya expanded product portfolio even further using our sustainable innovation technique with (again) Turkey's first semigloss paint called Ambians Royal, a member of the acclaimed Ambians group of products with long life and enhanced wiping characteristics. Polisan Kansai Boya managed to offer a more environmentally friendly new product to customers in the form of an Ambians Royal product containing a high performance and low VOC resin produced using Evoque™ technology, specially developed by the world's 2nd largest chemical company, Dow Chemical®, which is also a partner of Polisan Kimya.

**Identifier**

Risk 18

**Where in the value chain does the risk driver occur?**

Supply chain

**Risk type**

Transition risk

**Primary climate-related risk driver**

Technology: Substitution of existing products and services with lower emissions options

**Type of financial impact**

Reduced demand for products and services

**Company- specific description**

If supply chain processes are not efficiently managed, the shipping costs per unit of product will increase and therefore the carbon footprint per unit product will increase.

**Time horizon**

Current

**Likelihood**

Likely

**Magnitude of impact**

Medium

**Management method**

Polisan Kansai Boya use SAP WM (Warehouse Management), MM (Material Management), MRP (Material Requirement Planning) and SCM (Supply Chain Management) Modules to manage all processes more systematically. Polisan Kansai Boya also make use of the PP (Production Planning) module to ensure that production and planning processes are carried out in a healthy and coordinated manner by effectively using production resources efficiently and communicating effectively with all units. Polisan Kimya has been using the SAP MRP Module since 2016 in order to gain the ability to create flexible stocks, safety stocks and increase customer satisfaction.

**Identifier**

Risk 19

**Where in the value chain does the risk driver occur?**

Supply chain

**Risk type**

Transition risk

**Primary climate-related risk driver**

Technology: Substitution of existing products and services with lower emissions options

**Type of financial impact**

Costs to adopt/deploy new practices and processes

**Company- specific description**

In the event that the shipment plans are not managed efficiently, the transportation expenses per shipped unit product and carbon footprint per unit product will increase.

**Time horizon**

Current

**Likelihood**

Likely

**Magnitude of impact**

Medium

**Management method**

In 2016, Polisan Kansai Paint began work on improving the capacity utilization performance by integrating the pallet planning system with the packaging options added to the SAP system. In this way, Polisan Kansai Paint increased the occupancy level of the vehicle to 19,650 kg in 2018, which is an average of 15,700 kg in 2015, thus achieving carbon footprint reduction.

Supply Chain Management at Polisan Kimya
The company increased their two-way use of vehicles by 32% as compared to 2017. Thus, they saved 14.28 tons of fuel and prevented 3,750 kg of carbon footprint emissions.

**Identifier**

Risk 20

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Policy and legal: Mandates on and regulation of existing products and services

**Type of financial impact**

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

**Company- specific description**

The Energy Efficiency Law, adopted in 2007, set forth measures for energy efficiency in energy generation, transmission, distribution and consumption phases at industrial establishments, buildings, power generation plants, transmission and distribution networks and transport. In addition, energy efficiency strategy of Turkey is to decrease energy intensity by at least 20% by the year 2023. Its strategic purposes are mainly reduce energy intensity and energy losses in industry and services sectors. In line with these developments, possible legal requirements related to energy may cause increase in operational cost. In addition, Turkey is foreign-dependent in energy, both electricity and natural gas, hence any regulatory uncertainty or financial fluctuation in energy at global scale would strongly affect operations in Turkey.

**Time horizon**

Short-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

**Management method**

At Polisan Kimya facility, it has saved (48%) 24,161 kWh of energy by producing the Polifen 47 product in a newly commissioned 14 m3 reactor with an 18 kW mixer instead of an 11 m3 reactor with a 22 kW mixer and an 8 m3 reactor with a 15 kW mixer.

At Polisan Kimya facility, It has been determined that savings can be achieved in the time spent during the cooling stage in the system to improve the production times of the process. The production time spent in each lot has been reduced by 33% and energy savings of 24,306 kWh has been achieved by supplying cooler water in the seawater lines.

Also, Polisan Kansai Boya gives priority to environmentalist production in design and therefore has revised formulas in order to shorten the process periods in all product formulas in the furniture group so that a 10% energy saving and productivity increase have been reached in furniture group paint production. Also Polisan Kansai Boya applied in 2018 for "Development of Intumescent Paint with Enhanced Insulation Capabilities for Industrial Structures" TEYDEB Project.

**Identifier**

Risk 21

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Policy and legal: Mandates on and regulation of existing products and services

**Type of financial impact**

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

**Company- specific description**

The Energy Efficiency Law, adopted in 2007, set forth measures for energy efficiency in energy generation, transmission, distribution and consumption phases at industrial establishments, buildings, power generation plants, transmission and distribution networks and transport. In addition, energy efficiency strategy of Turkey is to decrease energy intensity by at least 20% by the year 2023. Its strategic purposes are mainly reduce energy intensity and energy losses in industry and services sectors. In line with these developments, possible legal requirements related to energy may cause increase in operational cost. In addition, Turkey is foreign-dependent in energy, both electricity and natural gas, hence any regulatory uncertainty or financial fluctuation in energy at global scale would strongly affect operations in Turkey.

**Time horizon**

Short-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

**Management method**

Energy Measurement System Improvements

In 2018, company achieved remote access to 68 additional energy analyzers to improve traceability and obtain energy normalization values per process in a more reliable way in Dilovası Facility. With this project in which company moved the previously installed meters to the central panel according to the location of the power distribution panel, the number of electricity meters integrated to the remote access system has been increased to 85.

**Identifier**

Risk 22

**Where in the value chain does the risk driver occur?**

Supply chain

**Risk type**

Transition risk

**Primary climate-related risk driver**

Technology: Substitution of existing products and services with lower emissions options

**Type of financial impact**

Research and development (R&D) expenditures in new and alternative technologies

**Company- specific description**

Due to the increase in the carbon footprint of the supplied raw materials, Polisan Holding's scope-3 emission will increase.

**Time horizon**

Current

**Likelihood**

More likely than not

**Magnitude of impact**

Medium

**Management method**

R&D and Innovation at Polisan Kansai Boya

Polisan Kansai Boya's R&D strategy is based on creating products, the quality of which is compliant with national and international standards, whose impact performance on indoor air quality is improved, which consume fewer natural resources in the production process and whose environmental impact is minimized. Company produced water-based paste instead of solvent-based paste with their TEYDEB project titled "Development of Sustainable EcoFriendly High Concentration Water-Based Mix System Pigment Paste" which they have been conducting with Goteks, a local paste producer, since 2017 under the scope of industrial cooperation works at Polisan Kansai Boya. TEYDEB project titled Development of Self-Repairing Water-Based Polyurethane Emulsions and Their Use in the Formulations of Anti-Corrosion Paint" which company conducts with Sabancı University under the scope of university-industry cooperation has been approved in 2018 and company have started the work. Upon the completion of the works, company will include one more environment-friendly product which has lower emissions through the use of water-based raw materials instead of solvent-based materials and which is also long-lasting and minimizes the use of resources through its self-repairing feature.

**Identifier**

Risk 23

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Policy and legal: Mandates on and regulation of existing products and services

**Type of financial impact**

Increased costs and/or reduced demand for products and services resulting from fines and judgments

**Company- specific description**

Under the 2014/2 Kocaeli Governorship Mandate on 'the Storage, Discharge and Transportation of Chemicals', closed circuit filling in related chemical storage tanks have to conducted.

**Time horizon**

Current

**Likelihood**

Likely

**Magnitude of impact**

Medium

**Management method**

Certificate of Conformance for Closed-Loop Chemical Loading and Unloading Projects for Tank to Tank, Tanker to Tank, Ship to Tank Operations

For Polisan Kansai Boya and Polisan Kimya, the project including all measures, maintenance and inspection operations requiring that leak-proof couplings and dual pressure/vacuum valves must be present at the storage tank connection points of sealed vessels, a system must be present that returns generated emissions back to the tank, and/or a treatment system must be available at the tank outlet have been completed and the Provincial Directorate has issued a certificate of conformance.

**Identifier**

Risk 24

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Physical risk

**Primary climate-related risk driver**

Chronic: Changes in precipitation patterns and extreme variability in weather patterns

**Type of financial impact**

Increased operating costs (e.g., inadequate water supply for hydroelectric plants or to cool nuclear and fossil fuel plants)

**Company- specific description**

At Polisan Holding, seawater, well water and municipal water are used in operations. As a consequence of climate change, the water scarcity would lead to increase in operational cost to treat sea water and consequently failure of business continuity.

**Time horizon**

Long-term

**Likelihood**

Very likely

**Magnitude of impact**

High

### Management method

Polisan Kimya is carrying out various projects aimed at maintaining the sustainability of natural resources during production processes. As a result of these projects initiated in 2018:

- It has been saved approximately 7,548 m3 of water by ensuring that the distillate generated during production of resins is reused in production processes,
- It has been saved 2,400 m3 of water by using a closed system instead of directly discharging the water from the vacuum water cooling line to a wastewater pool,

### Identifier

Risk 25

### Where in the value chain does the risk driver occur?

Supply chain

### Risk type

Transition risk

### Primary climate-related risk driver

Reputation: Shifts in consumer preferences

### Type of financial impact

Reduced demand for goods and/or services due to shift in consumer preferences

### Company- specific description

Due to the increase in the carbon footprint of the supplied materials or services, Polisan Holding's scope-3 emission will increase.

### Time horizon

Current

### Likelihood

Likely

### Magnitude of impact

Medium-low

### Management method

Code of Business Ethics and Conduct for Suppliers

As many social, ethical, and environmental impacts are related to relations with suppliers as much as with operations, Polisan pay attention to the sustainability of supply chain. In addition to Polisan Holding General Purchase Conditions, company have prepared the Code of Business Ethics and Conduct for Suppliers which is in line with company' sustainability policy and by considering the principles of the UN Global Compact; thus Polisan thinks that company will be able to create a development area for the suppliers whose awareness is lower on these issues and encourage them to revise their own activities.

Monitoring Greenhouse Gas Emissions Emerging From Transportation

Polisan monitor the greenhouse gas emissions of suppliers' providing them with transportation services on an annual basis. In the event that there is an increase in unit emissions according to the calculations made based on the fuel consumption rate depending on the vehicle type, company expect suppliers' to explain the reason and take the necessary actions.

# C4. Targets and performance

## C4.1b

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

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**Target reference number**
Int 1

**Scope**
Scope 1+2 (location-based)

**% emissions in Scope**
100

**Targeted % reduction from base year**
4

**Metric**
Metric tons CO2e per unit of production

**Base year**
2017

**Start year**
2018

**Normalized base year emissions covered by target (metric tons CO2e)**
0.047

**Target year**
2018

**Is this a science-based target?**
No, and we do not anticipate setting one in the next 2 years

**% of target achieved**
100

**Target status**
Expired

**Please explain**
In Polisan Kansai Paint, the process targets are determined annually by the process owners at the beginning of each year. It is reviewed at 6-month intervals and in case of need, new actions are taken to reach the target or the target revision is made. In 2018, the carbon footprint per unit manufactured product by Polisan Kansai Boya decreased by 4% compared to 2017. The reason for this reduction is the training given to employees on energy efficiency, the replacement of lighting with LEDs, and other energy efficiency projects.

**% change anticipated in absolute Scope 1+2 emissions**
0

**% change anticipated in absolute Scope 3 emissions**

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**Target reference number**
Int 2

**Scope**
Scope 1+2 (location-based)

**% emissions in Scope**
100

**Targeted % reduction from base year**

4

**Metric**
Metric tons CO2e per unit of service provided

**Base year**
2017

**Start year**
2018

**Normalized base year emissions covered by target (metric tons CO2e)**
0.00069

**Target year**
2018

**Is this a science-based target?**
No, and we do not anticipate setting one in the next 2 years

**% of target achieved**
0

**Target status**
Expired

**Please explain**
In Poliport Kimya, the process targets are determined annually by the process owners at the beginning of each year. It is reviewed at 6-month intervals and in case of need, new actions are taken to reach the target or the target revision is made. In 2018, the carbon footprint per unit handled product by Poliport Kimya increased by 7% compared to 2017.

**% change anticipated in absolute Scope 1+2 emissions**
0

**% change anticipated in absolute Scope 3 emissions**

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**Target reference number**
Int 3

**Scope**
Scope 1+2 (location-based)

**% emissions in Scope**
100

**Targeted % reduction from base year**
0

**Metric**
Metric tons CO2e per unit of production

**Base year**
2017

**Start year**
2017

**Normalized base year emissions covered by target (metric tons CO2e)**
0.077

**Target year**
2018

**Is this a science-based target?**

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science Based Targets initiative

**% of target achieved**

100

**Target status**

Achieved

**Please explain**

In Polisan Kimya, the process targets are determined annually by the process owners at the beginning of each year. It is reviewed at 6-month intervals and in case of need, new actions are taken to reach the target or the target revision is made. In 2018, the carbon footprint per unit manufactured product by Polisan Kimya decreased by 24% compared to 2017. The reason for this reduction is the training given to employees on energy efficiency, energy efficiency projects.

**% change anticipated in absolute Scope 1+2 emissions**

0

**% change anticipated in absolute Scope 3 emissions**

# C12. Engagement

## C12.3e

**(C12.3e) Provide details of the other engagement activities that you undertake.**

The Holding Companies are closely working with associations such as IKMIB(Istanbul Chemicals and Chemical Products Exporters' Association), CEVKO(Environmental Protection and Packaging Waste Recovery and Recycling Trust), BOSAD(The Association of Turkish Paint Industry), GSO(Gebze Chamber of Industry), KSO(Kocaeli Chamber of Industry), CDI(Chemical Distribution Institut), FETSA(the Federation of European Tank Storage associations), EPCA(The European Petrochemical Association), TÜRKLİM (Port Operators Association of Turkey), TKSD (Turkish Chemical Manufacturers Association) and especially take part in and support monthly held Environmental Specialization Group meetings at TKSD and Climate Change Working Group meetings at TUSIAD. In addition, we sponsor Istanbul Carbon Summit, the platform in which globally and locally developed carbon markets that are developed and legislated.