



# Pigeon Group TCFD Report 2024

Pigeon Corporation  
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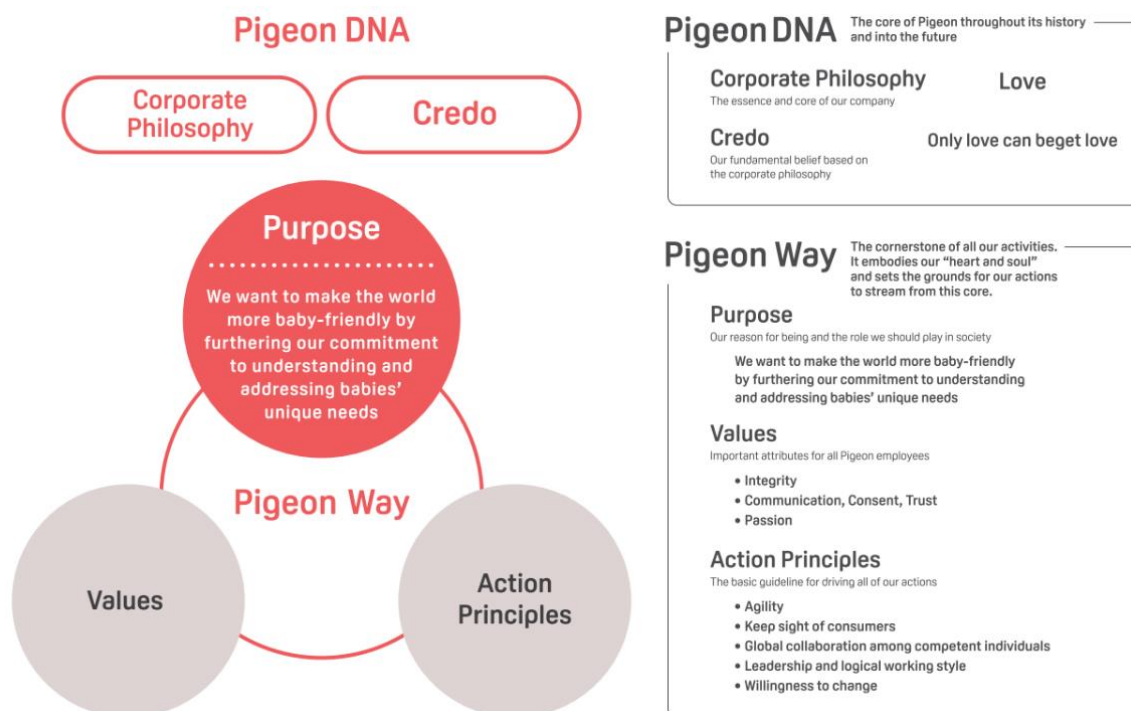
## Editorial Approach

The Pigeon Group TCFD Report 2024 contains information about the Pigeon Group’s governance, strategy, risk management, and metrics and targets, prepared according to the TCFD recommendations. The purpose of this report is to foster an understanding of the Pigeon Group’s climate change initiatives and further improve our efforts through communication with our stakeholders.

The identification, analysis, and impact assessment of climate-related risks and opportunities in this report are based on information available to us as of July 2023.

# 1 Introduction

Pigeon's Purpose is "We want to make the world more baby-friendly by furthering our commitment to understanding and addressing babies' unique needs." Accordingly, each and every director and employee of the Pigeon Group performs their duties every day to achieve a sustainable society through the Group's business activities.



Note: For more information on Pigeon DNA and Pigeon Way, please visit our website: <https://www.pigeon.com/about/pigeonway/>

## 1.1 Our Idea of Sustainability

To seek to increase social value, economic value, and the summation of the two that is corporate value, and to "continue to be an essential presence within society": this is the Pigeon Group's basic idea of sustainability. The Group strives to achieve sustainable growth as a corporation by reducing its adverse environmental impact and contributing to solving social problems based on the Pigeon ESG/SDGs Policy, using Pigeon Sustainable Action as a guide to realizing its purpose through business activities.

### Pigeon Sustainable Action

Pigeon's Purpose is to make the world more baby-friendly by furthering our commitment to understanding and addressing babies' unique needs.

In order to create a baby-friendly future, we aim to grow sustainably as an indispensable part of society by reducing our environmental impact and resolving the social issues that affect babies and their families across all the countries and regions where we operate, and by embracing the challenge of new business endeavors.

## 1.2 Our Key Issues (Materiality)

The Pigeon Group has identified five key issues<sup>1</sup> from an ESG perspective that the Group must address in the medium to long term in order to realize its Purpose and grow sustainably as an essential presence within society. Action plans for each key issue are incorporated into each three-year Medium-Term Business Plan and carried out accordingly.

### Sustainable society development story, based on Pigeon ESG/SDGs Policy



With regard to the key issue of reducing environmental impact, the Pigeon Green Action Plan has been formulated as a medium- to long-term quantitative target for the Pigeon Group as a whole. Each business segment formulates and implements action plans to achieve targets set in the Pigeon Green Action Plan.

### Key Issues to Be Addressed in the Medium to Long Term in Order to Realize Our Purpose



## 1.3 Pigeon Green Action Plan

Pigeon has formulated the Pigeon Green Action Plan to leave a rich Earth for the future of babies born tomorrow. Under the Pigeon Green Action Plan, the Pigeon Group focuses on resolving the climate change issue, the plastics issue, and declining biodiversity, all of which are particularly relevant to the Group's business activities, and strives to reduce its adverse environmental impacts by setting medium- to long-term targets toward decarbonization, a circular society, and coexistence with nature.<sup>2</sup>

<sup>1</sup> For more information about our Key Issues (Materiality), please visit our website:  
<https://www.pigeon.com/sustainability/materiality/>

<sup>2</sup> For more information about the Pigeon Green Action Plan, please visit our website:  
[https://www.pigeon.com/sustainability/environment\\_top/pigeon\\_green\\_action\\_plan/](https://www.pigeon.com/sustainability/environment_top/pigeon_green_action_plan/)



# Pigeon Green Action Plan

Leaving a rich earth for the future of babies born tomorrow



## Decarbonization

2050—Scope 1 & 2 GHG emissions: **Net Zero**

2030—Scope 1 & 2 GHG emissions: **50% reduction** (compared to FY2018)

Scope 3 GHG emissions: Reductions with Science-Based Targets (to be finalized)



## Circular society

2030—Plant-derived or recycled materials in packaging: **50% by weight**

2030—Reusable/recyclable/compostable packaging: **100%**



## Coexistence with nature

2030—Sustainable paper usage rate in packaging: **100%**

2030—RSPO-certified sustainable palm oil usage rate in Pigeon-manufactured skincare/washing/cleaning products: **100%** (including RSPO Credits)

RSPO stands for Roundtable on Sustainable Palm Oil

RSPO Credits using the book and claim (B&C) model support certified palm (kernel) oil production by allowing end users to purchase credits issued based on the amount of palm (kernel) oil produced by RSPO-certified producers.

## 1.4 Supporting the TCFD Recommendations

In recent years, the effects of climate change have become visible around the world, with various natural disasters causing loss of life and property. The frequency and severity of such natural disasters is only expected to increase. Policy changes and new regulations to address climate change are expected in countries around the world, along with social changes such as market shifts and changes in consumer awareness in the medium to long term.

To realize our Purpose and continue to exist into the future despite these changes, we consider it vital to recognize the risks and opportunities stemming from climate change that could affect our business strategy or financial planning over the medium to long term, and manage these risks and opportunities appropriately.

For this reason, in 2021, we publicly declared our support for the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD). We continue to communicate with our stakeholders on climate change issues as we report on our understanding and management of the business risks and opportunities posed by climate change through this Report, our corporate website, and the CDP Climate Change Questionnaire.



## 2 Climate Change–Related Financial Information

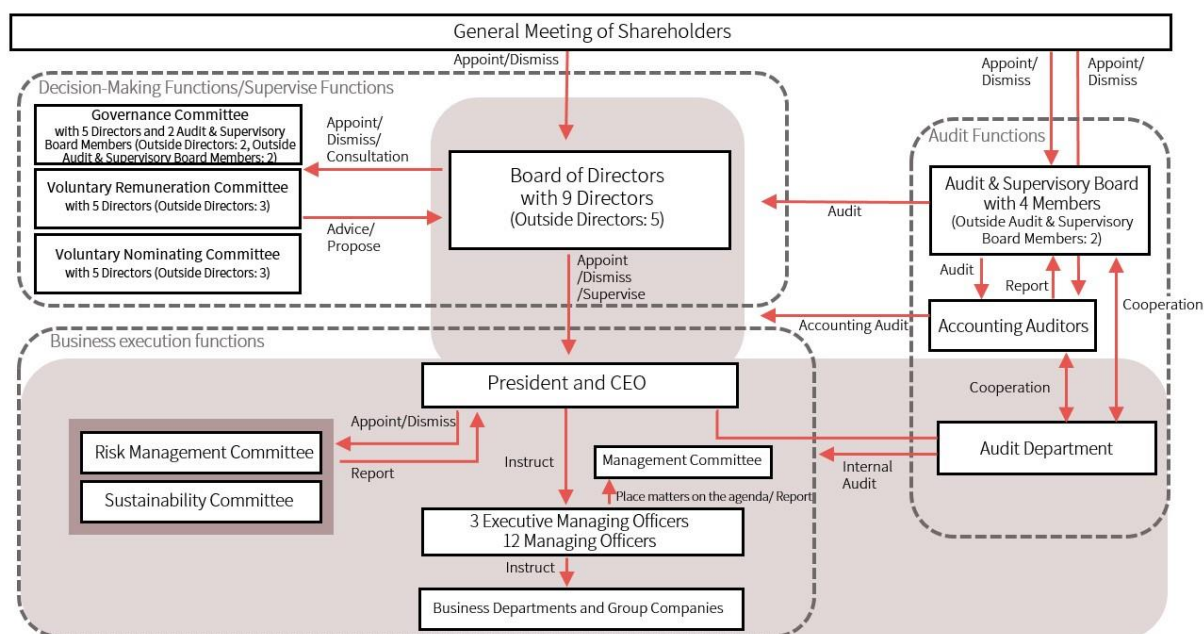
### 2.1 Governance Around Climate-Related Risks and Opportunities

#### 2.1.1 Management by the Risk Management Committee and Sustainability Committee

We have established a GHO (Global Head Office) Risk Management Committee chaired by the Director responsible for GHO, under the supervision of the president and CEO. This committee is responsible for short- to medium-term risk management across all of the Group's businesses. Beneath the GHO Risk Management Committee are individual risk management committees for each business segment, each chaired by the head of operations for that segment. These committees identify and assess risks for each company within a business segment, examine and implement measures to address these risks, and monitor progress made. Climate-related risks that are both likely to occur in the short or medium term and directly linked to business continuity, such as operational disruptions due to flooding, are incorporated into the risk management process led by these Risk Management Committees.

Because climate-related risks and opportunities and other aspects of reducing our adverse environmental impact must be managed from a long-term perspective that cuts across multiple business segments, we have also established a Sustainability Committee chaired by the Director responsible for GHO and comprising the directors and managing officers responsible for operations in each business segment along with the Business Strategy Division Manager, under the supervision of the president and CEO. The Sustainability Committee sets medium- and long-term targets for the Group related to environmental conservation, including climate change response, identifies and reviews our key issues (materiality), and monitors Group-wide and business segment-level progress against non-financial targets. Beneath the Sustainability Committee are individual sustainability committees for each business segment, each chaired by the director or managing officer responsible for that business segment. These individual Sustainability Committees discuss progress on initiatives and future action plans within their business segment.

Figure 1: Corporate Governance Organization Chart (as of December 2024)



### 2.1.2 Oversight by the Board of Directors

The Director responsible for GHO reports annually to the Board of Directors on the results of deliberations by the GHO Risk Management Committee, which meets at least once a year, and the Sustainability Committee, which meets at least twice a year, as well as the overall progress of the Pigeon Group's initiatives. The Board of Directors performs oversight of climate-related risks and opportunities for the Group based on the reports received from these two committees.

Figure 2: Reporting structure for the GHO Risk Management Committee and Sustainability Committee (as of October 2024)



For instance, the Pigeon Group is striving to reduce its Scope 1 and Scope 2 greenhouse gas emissions in order to contribute to mitigating climate change. The Director responsible for GHO, who chairs the Sustainability Committee, reports annually to the Board of Directors on the Group's progress against its greenhouse gas emissions reduction target. The Pigeon Green Action Plan (see p. 3), a set of medium- and long-term environmental targets developed by the Sustainability Committee in 2022, was also reported to the Board of Directors, who approved it.

### 2.1.3 Reflection of non-financial performance in director remuneration

To incentivize medium- and long-term performance by the Group and increases in corporate value, stock remuneration is paid to directors (excluding independent outside directors) when they step down. During the 8th Medium-Term Business Plan (2023–2025), performance is evaluated on the basis of 80% financial indicators and 20% non-financial indicators related to Key Issues (Reducing our Environmental Impact, Contributing to the Resolution of Social Issues, Managing talent and Cultivating the Right Culture for our Purpose). Evaluation of performance on “Reducing our Environmental Impact” is based on progress toward the targets set in the Pigeon Green Action Plan, which means that the Pigeon Group's Scope 1 and Scope 2 greenhouse gas emissions reduction performance is reflected in director's remuneration.<sup>3</sup>

<sup>3</sup> For more information about executive remuneration policy, please visit our website: [https://www.pigeon.com/sustainability/files/pdf/Executive\\_Remuneration\\_Policy\\_e\\_202403.pdf](https://www.pigeon.com/sustainability/files/pdf/Executive_Remuneration_Policy_e_202403.pdf)

## 2.2 Strategy and Risk Management

### 2.2.1 Processes for identifying and assessing climate-related risks and opportunities

Business risks that require countermeasures with a short- to medium-term time base are identified, analyzed, and assessed as part of our risk management activities (company-wide risk assessment), and action plans to address major risks are considered and implemented.

Given that climate-related impacts occur over the long term, risks and plans must be considered with a long-term perspective that cuts across multiple business segments. For this reason, separate from the specified process for identifying risks in risk management activities, we have identified and analyzed the potential financial impact of long-term climate-related risks concerning our business, within a process for identifying climate-related risks and opportunities and performing scenario analysis, incorporating input from external consultants with insight into climate change, and in coordination with relevant departments.

Because the Pigeon Group provides a wide range of products and services to customers in over 90 countries and regions around the world, our analysis has focused on manufacturing and sales of nursing bottles,<sup>4</sup> nipples, and skincare sold in Japan and China, which account for a relatively significant proportion of sales in those regions. However, the impact of carbon pricing and electricity price increases, as well as the impact of higher freight rates, has been analyzed for all Pigeon Group sites. The context and time frame adopted for impact analysis was the global environment and society in 2030. Physical risks were also analyzed with reference to the year 2050.

Under our climate-related risk and opportunity identification process, based on the transition risks, physical risks, and opportunities provided as examples by the TCFD, we extracted risks and opportunities related to our nursing bottle, nipple, and skincare business models.

Of the extracted risks and opportunities, those expected to have a financial impact in future and those our investors are thought to take a strong interest in were identified as climate-related risks and opportunities that should be prioritized for impact analysis (see Table 1).

Table 1: Climate-related risks and opportunities identified for impact analysis

Transition Risks	
Introduction of carbon pricing mechanisms	Strengthening of regulations around GHG emissions
Introduction of regulations on plastics	Increase in electricity prices due to climate policy change
Increase in freight rates due to climate policy change	Increase in material prices due to climate change and climate policy change
Changes in consumer preferences toward products made with consideration for the environment	-

<sup>4</sup> A “nursing bottle” is defined as a feeding bottle equipped with nipple, cap, and hood.

Physical Risks	
Damage to manufacturing properties, operational stoppages at factories, and interruption of product/main material procurement routes due to flooding	Shortages of water needed for production due to drought
Inundation and operational stoppages at factories due to sea level rise	Operational stoppages at factories due to the spread of new infectious diseases accompanying climate change

Opportunities	
Changes in consumer preferences toward products made with consideration for the environment	Increased demand for products capable of saving water, due to water shortages
Increased demand for products to protect babies from heat, humidity, and dryness due to rising average temperatures	Increased demand for products that can contribute to preventing infection by infectious diseases

### 2.2.2 Climate scenarios used for impact analysis

To analyze the impact of climate-related risks and opportunities on our nursing bottle, nipple, and skincare businesses, we considered two scenarios: one in which the average global temperature increase is limited to 1.5°C above pre-industrial levels by 2100 (the “1.5°C scenario”), and one in which average global temperature reaches 4°C above pre-industrial levels by 2100. We refer to these as the 1.5°C scenario and the 4°C scenario, respectively.

Referring to external sources like the Net Zero Emissions by 2050 scenario in the *World Energy Outlook* published by the International Energy Agency and the Intergovernmental Panel on Climate Change (IPCC)’s RCP8.5, SSP1-1.9, and SSP5-8.5 scenarios, we envisioned the worlds of the 1.5°C and 4°C scenario in 2030 as shown in the table below. Based on this, we used forecast values for variables in 2030 (and, for some variables, in 2050) to quantitatively analyze the financial impact of climate-related risks and opportunities on our nursing bottle, nipple, and skincare businesses under each scenario.

Table 2: 1.5°C scenario and 4°C scenario worlds

1.5°C scenario world	4°C scenario world
<ul style="list-style-type: none"> <li>● Environmental awareness among consumers rises.</li> <li>● Regulations on greenhouse gas emissions and combustion and materials derived from fossil fuels are introduced and greatly strengthened.</li> <li>● Regulations on oil palm plantations intended to ensure sustainable production are greatly strengthened.</li> <li>● Greater severity and frequency of natural disasters, including floods and droughts.</li> </ul>	<ul style="list-style-type: none"> <li>● Environmental awareness among consumers does not rise as much as in the 1.5°C scenario.</li> <li>● Strong regulations toward decarbonization are not introduced.</li> <li>● Much greater severity and frequency of natural disasters, including floods and droughts.</li> <li>● Uncertainty about the future for babies may become a factor in decreasing birth rates.</li> </ul>

### 2.2.3 Specific climate-related risks and opportunities and their impact on business

#### (1) Risks and opportunities relating to consumer markets for nursing bottles, nipples, and skincare



Under the 4°C scenario, significant changes to the climate and environment are expected, including more frequent and severe natural hazards and extreme heat waves. For this reason, uncertainty about the future for babies may become a factor in decreasing birth rates, which could affect sales of nursing bottles and nipples.

Under the 1.5°C scenario, consumer awareness of environmental concerns is expected to rise amid the transition to a zero-carbon society, resulting in a stronger preference for products manufactured with concern for the environment across the supply chain. To respond to these consumer preferences, it will be important for companies to make manufacturing more environmentally friendly across the entire value chain—by switching to environmentally friendly packaging, expanding the use of non-fossil fuel-derived and recycled materials, and decarbonizing the production process, among other measures—and also develop communication strategies that convey environmental value to consumers.

Additionally, under both the 1.5°C and the 4°C scenario, higher average global temperatures are expected to make natural hazards more prevalent and severe than today due to changes in climate and increasingly frequent extreme weather events. For this reason, higher demand is expected for skincare products that protect against heat, humidity, and dryness, as well as rehydrating products for hot periods. Meanwhile, higher demand is expected for cleansers, products for disinfection, and breastfeeding-related items that require no or little water, as water shortages are due to droughts and floods become more frequent.

Table 3: Risks and potential financial impacts in consumer markets (in 2030)

Scenario	Climate-related risks and potential financial impacts		Financial impact
4°C scenario	Market risk	Greater severity and frequency of natural hazards results in uncertainty about the future for babies, which becomes a factor in decreasing birth rates, which in turn causes and nursing bottle and nipple sales fall.	Lower sales (difficult to quantify)
1.5° scenario	Transition risk	Consumers seek to shop more ethically, resulting in lower sales of products that use virgin plastic derived from fossil fuels, whether in the product itself or the packaging.	Lower sales (difficult to quantify)

Table 4: Opportunities and potential financial impacts in consumer markets (in 2030)

Scenario	Climate-related opportunities and potential financial impacts		Financial impact (annual)
1.5°C scenario and 4°C scenario	Products	Heat, humidity, or dryness increases in more areas due to rising average global temperatures, resulting in higher demand for skincare products to protect against heat, humidity, and dryness, as well as rehydrating products for hot periods.	Higher sales Up to ¥3.9 billion <sup>1</sup>
	Products	Water shortages become more frequent due to droughts and floods, resulting in higher demand for cleansers, disinfection products, and breastfeeding-related items that require no or little water.	Higher sales Up to ¥50 million <sup>1</sup>

1.5°C scenario	Products	Consumers seek to shop more ethically, resulting in higher demand for products manufactured with concern for the environment, such as products using non-fossil fuel-derived plastic or recycled materials.	Higher sales (difficult to quantify)
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1: These calculations incorporate the expected growth of the global skincare market by 2030 (using forecasts by research companies).

### *Pigeon's strategy regarding risks and opportunities in consumer markets (Japan/China)*

The nursing bottles and nipples that are Pigeon's core products are essential to babies and families regardless of climate or politics. Birth rates are falling in Japan and China due to various factors not all related to climate change. While Pigeon has the largest share of the nursing bottle market globally, that share is still only around 11%<sup>5</sup> (2022). This indicates an extremely high number of babies and families yet to be approached, and Pigeon believes that there is significant room for expansion of nursing bottle and nipple sales. The Pigeon Group's 8th Medium-Term Business Plan (2023–2025) has among its objectives increasing nursing bottle and nipple sales and profits by executing on strategies such as developing new markets and expanding sales of high-profitable nursing bottles (wide-necked nursing bottles) in existing markets.

Meanwhile, the skincare market is expected to grow globally through 2030. Under the Pigeon Group's 8th Medium-Term Business Plan, the Group will focus on further growing its skincare category, addressing consumer need for a wide variety of product functions.

Turning to environmentally friendly products, as part of the Pigeon Green Action Plan (see page 3), the Pigeon Group is engaged in initiatives to increase the usage rate of plant-derived and recycled materials in product packaging, and to reduce carbon emissions across its entire value chain, including both Pigeon Group sites and their supply chain. Through these initiatives, the Group will respond to rising environmental awareness among consumers.

## **(2) Transition risks and potential financial impact**

The 1.5°C scenario envisages the introduction of strict regulations and policies aimed at decarbonization around the world. Conceivable risks for the Pigeon Group arising from such regulations and policies include an increase in operating costs due to the introduction of carbon pricing and new regulations (or the strengthening of existing regulations) on the use of plastics.

### **■ Carbon pricing**

At present, no Pigeon Group sites are subject to carbon taxes based on GHG emissions or part of any GHG emissions trading (cap-and-trade) scheme.

However, one risk envisaged under the 1.5°C scenario is the introduction of carbon pricing mechanisms globally, resulting in the Pigeon Group becoming subject to a carbon tax on either Scope 1 or Scope 1 & 2 GHG emissions, or needing to buy emissions allowances as part of an emissions trading

<sup>5</sup> Source: Global Info Research survey

scheme. The Group has estimated the potential impact of carbon pricing mechanisms under two scenarios: Scenario A, in which only Scope 1 emissions are subject to carbon taxation, or Scenario B, in which both Scope 1 and 2 emissions are subject to carbon taxation. In both Scenario A and Scenario B, the assumption was that such taxation would apply to emissions at all Group sites.

#### ■ Regulations on plastics

Because plastic contains carbon, its incineration results in CO<sub>2</sub> emissions. Environmental pollution due to microplastics is another concern. Accordingly, the 1.5°C scenario envisages stronger regulations around the globe on both the use and disposal of plastics, to reduce both GHG emissions and environmental pollution.

Three specific scenarios for 2030 were envisioned: (1) A tax on the use of virgin plastics derived from fossil fuels (applying to both products and packaging); (2) A ban on the use of virgin plastics derived from fossil fuels in product packaging; and (3) Regulations requiring collection and recycling of products and packaging once they were no longer needed. The expected financial effect of each scenario on the Pigeon Group's nursing bottle, nipple, and skincare businesses in both Japan and China has been estimated.

Currently, most of the packaging for skincare products sold by the Pigeon Group's Japan Business and China Business (bottles, caps, and refill pouches) uses virgin plastic derived from fossil fuels. The financial impact of risk 2 above (a ban on virgin plastic derived from fossil fuels) was assumed to be the amount of investment that would be required at Pigeon Home Products to deploy manufacturing equipment capable of handling new packaging materials and shapes, assuming that fossil fuel-derived plastic containers would be replaced by paper containers. This we call Scenario A. Scenario B is that Pigeon switches from virgin plastic packaging to biomass plastic packaging for all skincare products manufactured by Pigeon Home Products and PIGEON MANUFACTURING (SHANGHAI), and the impact for this scenario was estimated as the increased cost of purchasing packaging.

To estimate the financial impact of risk 3 above (obligatory collection and recycling of plastic products and packaging), we assumed that obligations for collecting and recycling all plastic products and packaging, whether derived from fossil fuels or plants, would fall on manufacturers of finished products. Accordingly, we estimated the cost of collecting and recycling all plastic nursing bottles, nipples, and plastic packaging for skincare products sold by our Japan Business and China Business.

#### ■ Increased electricity and material prices

Strict regulations aimed at decarbonization, including carbon pricing mechanisms, could increase operational costs for electricity companies, resulting in higher electricity prices.

In the *World Energy Outlook* published by the International Energy Agency (IEA), under the scenario in which GHG emissions are reduced to net zero by 2050, electricity prices in 2030 are forecast to be higher than they were in 2018. We estimated the impact of these increased prices based on the amount of electricity forecast to be purchased by the Pigeon Group as a whole in 2030, accounting for expected business growth.

There is also the risk that suppliers of plastic materials could become subject to carbon pricing



mechanisms or plastic taxes, which, along with rising electricity prices, would increase their manufacturing costs and ultimately increase the price of the plastic materials and plastic product packaging materials purchased by the Pigeon Group.

Palm oil is a raw material for ingredients used in skincare products, but oil palm plantation development has been linked to deforestation and GHG emissions from peaty land. Under the 1.5°C scenario, there is a risk that restrictions on the use of land for oil palm cultivation could be strengthened in order to reduce GHG emissions from the agricultural sector, and that carbon pricing mechanisms applied to manufacturers of ingredients derived from palm oil could increase their manufacturing costs and thus increase the price of skincare materials derived from palm oil.

We estimated the financial impact of these increases in the prices of plastic materials and palm oil-derived materials for all the plastic nursing bottles, nipples, plastic packaging, and skincare products using palm oil-derived materials sold by our Japan Business and China Business.

#### ■ Increase in freight rates

Because the Pigeon Group was unable to obtain freight rates forecasts for 2030 based on the 1.5°C scenario, the financial impact of freight rates increases due to climate-related policy changes could not be estimated. However, under the 4°C scenario, the world is expected to still be dependent on fossil fuels and unable to transition to a decarbonized society. In this scenario, the IEA has published predictions that demand for fossil fuels will rise and crude oil prices will be higher in 2030 than they are now. We estimated the financial impact on the Pigeon Group as a whole of higher freight rates based on these IEA estimates.

Table 5: Transition risks and potential financial impacts (2030)

Scenario	Climate risks and potential financial impacts		Financial impact (annual)
1.5°C scenario	Transition risks (regulations and policy)	A carbon tax is applied to Pigeon's Scope 1 or Scope 1 & 2 GHG emissions.	(Scenario A) Only Scope 1 taxed: Operating cost increase Up to ¥100 million <sup>1,2,3</sup>
			(Scenario B) Scope 1 & 2 taxed: Operating cost increase Up to ¥400 million <sup>1,2,3</sup>
		A plastic tax is applied to virgin fossil fuel-based plastics used in Pigeon products and packaging.	Operating cost increase Up to ¥400 million
		Virgin fossil fuel-based plastics is banned from use in product packaging, so Pigeon must switch to another packaging material. To do so, it must either invest in new facilities or face increased purchase costs for biomass plastic.	(Scenario A) Capital investment for switch to paper packaging: ¥80 million+ (Japan business only)
			(Scenario B) Switch to biomass plastic packaging: Operating cost increase Up to ¥1.3 billion <sup>4</sup>
		Manufacturers of products using virgin fossil fuel-based plastic are obligated to collect and recycle those products, so that Pigeon must spend money on collecting and recycling plastic nursing bottles and nipples.	Operating cost increase Up to ¥800 million

1.5°C scenario	Transition risks (market)	Operational costs for electricity generation companies rise due to decarbonization policy, increasing the price of electricity.	Operating cost increase Up to ¥150 million <sup>2,3</sup>
		Operational costs for resin manufacturer rise due to decarbonization policy, increasing the price of plastics.	Operating cost increase Up to ¥400 million
		To reduce GHG emissions, regulations on oil palm plantations are strengthened, which along with decarbonization policy increases operational costs for palm oil producers. As a result, the price of skincare materials derived from palm oil increases.	Operating cost increase Up to ¥40 million
4°C scenario	Market risk	Fossil fuel prices rise due to increased demand, increasing freight rates.	Operating cost increase ¥100 million or more <sup>3</sup>

1. Calculated by multiplying the Pigeon Group's forecast Scope 1 and Scope 2 CO<sub>2</sub> emissions in 2030 (both Scope 1 and Scope 2 emissions were estimated as 1.7 times emissions in 2021, i.e., without assuming that the decarbonization targets in the Pigeon Green Action Plan will be achieved) by the estimated carbon prices for 2030 given by the IEA in its *World Energy Outlook* (140 USD/tonne CO<sub>2</sub> for advanced economies; 90 USD/tonne CO<sub>2</sub> for emerging market and developing economies with net zero emissions pledges, and 25 USD/tonne CO<sub>2</sub> for other emerging market and developing economies).

2. Calculated by multiplying the Pigeon Group's forecast electricity costs in 2030 (estimated as 1.7 times electricity costs in 2021, on the assumption that electricity costs will rise proportional to the growth of the Group's business) by the estimated electricity price rise rates given for 2030 by the IEA in its *World Energy Outlook*.

Financial impact amounts marked with neither "1" nor "2" are estimated based on 2021 figures, with no adjustment for expected business growth.

3. Costs estimated for the entire Pigeon Group. Amounts not marked with "3" are calculated solely for the Pigeon Group's nursing bottle, nipple, and skincare businesses in Japan and China.

4. Estimated for skincare products manufactured by Pigeon Home Products and PIGEON MANUFACTURING (SHANGHAI). Excludes products whose manufacture is contracted out to OEMs.

### *Pigeon's strategy regarding transition risks*

Assessing climate-related transition risks under the 1.5°C scenario showed that strict regulations or policies aimed at decarbonization could have a financial impact on the Pigeon Group due to rising costs on many fronts and the need for new facilities investment.

In order to contribute to the decarbonization of society, the Pigeon Green Action Plan includes among its targets reducing our total Scope 1 & 2 GHG emissions to 50% of 2018 levels by 2030, and to net zero by 2050. We continue our efforts to save energy, generate more of our own electricity with photovoltaic systems, and purchase electricity generated from renewable sources as part of pursuing these targets. These efforts will not only contribute to a reduction in GHG emissions, they will also help to lessen our carbon tax liability or the amount of allowances we would have to purchase if a carbon pricing mechanism were introduced at some point.

Regarding the risk of regulations on plastic usage, our initiatives toward Pigeon Green Action Plan targets such as ensuring that packaging is at least 50% plant-derived or recycled materials by weight, and 100% reusable/recyclable/compostable, by 2030 will reduce the potential financial impact of a potential ban on virgin fossil fuel-based plastics or obligations to collect and recycle plastic packaging.

We are aware, however, that we cannot avoid or reduce all the potential financial impacts associated with transition risks by meeting the targets set in the Pigeon Green Action Plan. We recognize the need to prepare against cost increases due to rising electricity and plastic material prices and other increases in operating costs due to climate-related factors. We see reducing other costs and expanding the proportion of high-profit products sold as the best way to absorb increased costs across our entire business, but we may also need to consider passing certain costs along in product prices and sharing the burden with consumers. For that reason, we see a need to convey the importance and value of our decarbonization initiatives in our communications with consumers, actively preparing the ground so that consumers will more readily accept costs incurred in pursuit of decarbonization.

### **(3) Physical risks and potential financial impact**

Under both the 1.5°C scenario and the 4°C scenario, average global temperatures rising above even their current levels is expected to result in both acute issues, in the form of more frequent and severe extreme weather events and natural hazards, and chronic issues, in the form of changes in climate. For this reason, the probability of supply chain disruption due to floods, droughts, or outbreaks of new communicable diseases is expected to rise, resulting in more frequent interruptions to manufacturing.

#### **■Supply chain disruption due to natural hazards**

The Pigeon Group companies that manufacture the nursing bottles, nipples, and skincare products sold by the Group's Japan Business and China Business are Pigeon Home Products Corporation (Fuji, Japan), PIGEON MANUFACTURING (SHANGHAI) CO., LTD. (Shanghai, China), PIGEON INDUSTRIES (Thailand) CO., LTD. (Chonburi, Thailand), and THAI PIGEON CO., LTD. (Samutprakarn, Thailand). Of these companies, THAI PIGEON and PIGEON MANUFACTURING (SHANGHAI) are at risk of sudden inundation due to flooding. Additionally, every manufacturing site is at risk of supply interruption due to suppliers being affected by natural hazards such as floods, but we believe that the impact on sales of any given interruption would be minimal provided that manufacturing is not halted for longer than a month.

#### **■Sea level rise**

Under the 4°C scenario, rising sea levels are expected in most of the world's coastal regions. THAI PIGEON, which manufactures plastic nursing bottles, nipples, caps, and hoods, is located in a low-lying area near the sea with many waterways nearby; accordingly, it is at risk of chronic inundation due to rising sea levels in 2030 and 2050. If THAI PIGEON had to be moved to a different location, investment to build a new factory would be required as well as retirement of the current factory.

#### **■Water shortages**

Sites that manufacture skincare products use water to mix ingredients, clean equipment, and produce

steam. Pigeon Home Products, which manufactures skincare products for the Japanese market, uses groundwater from the base of Mount Fuji. The city of Fuji is rich in groundwater, so we see little risk of chronic groundwater shortages by 2030, even under the 4°C scenario. We also see little risk at present that PIGEON MANUFACTURING (SHANGHAI), which manufactures skincare products in Shanghai for the Chinese market, will be unable to obtain enough water by 2030.

However, over the ultra-long term, changes in rainfall patterns could increase the risk of water shortages even in Fuji or Shanghai, and we will continue monitoring these risks.

#### ■ Communicable disease outbreaks

Outbreaks of new communicable diseases due to climate change would put manufacturing sites at risk of shutdown due to lockdown policies. Under lockdown policies, not only is manufacturing halted, but various other problems such as consumer movement restrictions and congested distribution channels can arise, and so the financial impact of lockdown due to communicable disease on the Group's business cannot be estimated.

Table 6: Physical risks and potential financial impacts

Scenario	Climate-related risks and potential financial impacts		Financial impact
4°C scenario	Physical risks	Suppliers or distribution routes are affected by flood-related natural hazards, resulting in supply interruptions.	So long as manufacturing is not halted for more than one month, no impact on sales
		Production at suppliers is halted due to drought, resulting in supply interruptions.	So long as manufacturing is not halted for more than one month, no impact on sales
		Due to chronic inundation caused by rising sea levels, it becomes necessary to move THAI PIGEON to a new site.	Capital investment Up to ¥1 billion

#### *Pigeon's strategy regarding physical risks*

At manufacturing sites facing acute risk of inundation due to flooding, we are taking anti-inundation measures such as installing floodwalls and drainage pumps.

To address the risk of manufacturing interruptions due to supply chain disruption, we are taking measures such as securing sufficient raw materials for a specified period on-site, purchasing key materials from two suppliers (dual sourcing), and storing sufficient stocks of finished products. Assuming the existence of such materials on-site and finished products, we do not believe that an interruption to manufacturing would lead immediately to lost sales opportunities so long as it is not longer than one month. Additionally, Pigeon Home Products has prepared backup formulations and specifications for its main skincare products, allowing it to switch to different materials for manufacture in case of supply disruptions, and has also developed countermeasures to deploy in case of an emergency, such as notifying PIGEON MANUFACTURING (SHANGHAI) in advance in order to rapidly import from that source.

Regarding the manufacture of nursing bottles and nipples, THAI PIGEON and PIGEON

MANUFACTURING (SHANGHAI) they have established a framework under which, should either face difficulties in this area, the other can perform substitute manufacturing for them.

#### **2.3.4 Climate-related risk management process**

Among climate-related risks, those that are both highly likely in the short to medium term and directly connected to business continuity, such as the risk of operational interruptions due to flood, are managed as part of our risk management activities. Each business segment (Japan Business, China Business, Singapore Business, and Lansinoh Business) conducts a risk assessment identifying risk types likely to affect it (business risks, financial risks, hazard risks, compliance risks), and evaluates the importance of each risk based on likelihood and degree of expected harm. For each risk, responsible parties from the business segment and site in question decide whether a response is necessary and, if so, formulate and implement a concrete action plan to address the risk.

The GHQ Risk Management Committee also gathers risk information from business segments and corporate divisions and considers each risk to determine whether it is a major risk for the Pigeon Group as a whole for which countermeasures are required. If the committee determines that this is the case, a “risk owner” is chosen. The risk owner formulates and implements countermeasures and makes progress reports to the GHQ Risk Management Committee.

Climate-related risks that are unlikely in the short to medium term but, in the long term, both likely and capable of negatively affecting the Group’s business performance, are considered by the Sustainability Committee (chair: Director Responsible for GHQ), which determines the appropriate kind of response (reduce, transfer, accept, or control). Based on this determination, individual business segments consider and implement specific countermeasures as appropriate.

## 2.3 Metrics and Targets

### 2.3.1 Scope 1 & 2 GHG emissions reduction targets and results

The Pigeon Group's 7th Medium-Term Business Plan (2020–2022) included environmental impact reduction targets such as a reduction of Scope 1 & 2 CO<sub>2</sub> emissions per sales unit by 10% compared to 2018 levels. In pursuit of these targets, we have worked to reduce energy usage, generate our own electricity with photovoltaic systems, purchase electricity generated from renewable sources, and purchase renewable energy certificates.

As a result of these efforts, our Scope 1 CO<sub>2</sub> emissions in 2022 were 2,346 tonnes, while Scope 2 emissions were 9,395 tonnes. This means that total Scope 1 & 2 emissions were 50.1% lower than they were in 2018. Furthermore, Scope 1 & 2 CO<sub>2</sub> emissions per sales unit were 56.8% lower than in 2018.

With the beginning of the Pigeon Group's 8th Medium-Term Business Plan (2023–2025) in 2023, the Group changed its decarbonization target indicator from emissions intensity (emissions per sales unit) to absolute emissions. Among the targets in the Pigeon Green Action Plan are a 50% reduction in Scope 1 & 2 GHG emissions by 2030, compared to 2018 levels, followed by net zero Scope 1 & 2 GHG emissions by 2050. In pursuit of these targets, we will continue to strengthen our efforts to save energy and install photovoltaic systems to generate our own energy, as well as switching to renewable electricity and purchasing renewable energy certificates.

Table 7: Pigeon Group Scope 1 and 2 GHG emissions

	FY2018 (Base year)	FY2019	FY2020	FY2021	FY2022	FY2023
Scope 1 emissions (tonnes CO <sub>2e</sub> )	3,198	2,959	2,911	2,855	2,346	2,903
Scope 2 emissions (tonnes CO <sub>2e</sub> )	25,005	23,972	22,062	20,655	9,395	8,489
Scope 1&2 emissions (tonnes CO <sub>2e</sub> )	28,203	26,931	24,973	23,510	11,741	11,392
Reduction rate (Absolute Scope 1 & 2 emissions)	—	4.5%	11.5%	16.6%	58.4%	59.6%
Reduction rate (Scope 1 & 2 total per sales unit)	—	0.1%	7.2%	11.7%	<b>Target: 10%</b> 56.8%	—

<Scope of calculations> Pigeon Corporation and all consolidated subsidiaries in Japan and overseas (Coverage is 100%.) The financial control approach is used to consolidate GHG emissions.

<Calculation method> **Scope 1 emissions:** For the period January 2019 to December 2022, only CO<sub>2</sub> emissions from energy sources are included in the scope of calculation; from the period December 2023, non-energy greenhouse gases including methane and nitrous oxide are also included in the scope of calculation.

**Scope 2 emissions:** The market-based method is used for Scope 2 accounting. For sites where supplier-specific CO<sub>2</sub> emission factors are available, those are applied. Where not, the average CO<sub>2</sub> emission factors of a local country or electricity grid are applied. CO<sub>2</sub> emission factors for electricity consumption corresponding to the amount of purchased Renewable Energy Certificates are set to zero.

### 2.3.2 Scope 3 greenhouse gas emissions

Pigeon Group sees the need to identify not only Scope 1 and Scope 2 greenhouse gas (GHG) emissions from our production and non-production sites, but also Scope 3 GHG emissions throughout the entire value chain, including raw and packaging materials, transportation, use of sold products, and end-of life treatment of sold products and the need to work with our business partners to reduce Scope 3 emissions.

The Scope 3 GHG emissions of the entire Pigeon Group (Japan Business, China Business, Singapore Business and Lansinoh Business) in 2023 were 220.7 thousand tonnes of CO<sub>2</sub>e. The largest proportion of this was Category 1 emissions from purchased goods and services, which amounted to 157.7 thousand tonnes of CO<sub>2</sub>e, or 71% of total Scope 3 emissions.

GHG emissions from purchased products and services comprise GHG emissions from the procurement of raw materials and packaging materials for products produced in-house, and GHG emissions from the procurement of Pigeon- or Lansinoh-branded products manufactured by external manufacturers, such as baby drinks. Among raw materials for products manufactured in-house, procurement-related GHG emissions are particularly significant for non-woven fabrics consumed for wet and dry wipes, breastfeeding pads and disposable diapers, fluff pulp, and silicone. Among products manufactured by external suppliers, baby drinks and baby skin care products are a large source of GHG emissions due to their large procurement volumes.

In the future, we will set Scope 3 GHG emissions reduction targets at a level compliant with the SBT approval criteria set by the Science Based Targets initiative (SBTi), and will work on developing specific reduction plans based on the results of the Scope 3 GHG emissions analysis.

It should be noted that the Lansinoh business has already set a Scope 3 GHG emissions reduction target (69% reduction in Scope 3 GHG emissions per value added by 2030 compared from a 2019 base year) and has promoted reduction activities.

Table 8: Pigeon Group Scope 3 GHG emissions (thousand tonnes CO<sub>2</sub>e)

Category		FY2023
Category 1	Purchased goods and services	157.7
Category 2	Capital goods	19.6
Category 3	Fuel- and energy-related activities not included in Scope 1 or 2	3.5
Category 4	Upstream transportation and distribution	11.1
Category 5	Waste generated in operations	2.9
Category 6	Business travel	1.4
Category 7	Employee commuting	2.8
Category 9	Downstream transportation and distribution	4.2
Category 11	Use of sold products	4.8
Category 12	End-of-life treatment of sold products	12.7
Category 14	Franchises	0.01
Total Scope 3 GHG emissions		220.7

### **Scope of calculations**

Pigeon Corporation and all consolidated subsidiaries in Japan and overseas, including Lansinoh Business. (Coverage: 100%)

Duplicate GHG emissions occurred from intra-group trading between Japan, China, Singapore and Lansinoh Businesses have been deleted.

### **Calculation methods**

GHG emissions are calculated principally using *Emissions Unit Value Database for Accounting Greenhouse Gas Emissions, etc., by Organizations Throughout the supply chain (Ver.3.2)*, published in March 2022 by Japan's Ministry of the Environment and Ministry of Economy, Trade and Industry, (hereafter the "Emissions Unit Value DB"), or the LCI database *IDEA version 2.3* developed by the IDEA Laboratory established in Research Institute of Science for Safety and Sustainability (hereafter "IDEA v2.3"). For the GHG emissions calculation methods, please refer to the Pigeon ESG Databook 2023 ([www.pigeon.com/sustainability/databook/](http://www.pigeon.com/sustainability/databook/)).

### **2.3.3 Toward realizing a decarbonized society**

The Pigeon Group sees decarbonization as an urgent challenge for the entire world, and will continue to contribute to the realization by 2050 of a carbon-neutral society by continuing and strengthening its decarbonization initiatives and pursuing responses to climate change according to the Pigeon Green Action Plan.

For the latest information on the Pigeon Group's Scope 1, 2, and 3 GHG emissions, energy usage, and renewable energy use, as well as the Group's decarbonization initiatives, see the Pigeon corporate site ([https://www.pigeon.com/sustainability/environment\\_top/co2/](https://www.pigeon.com/sustainability/environment_top/co2/)), ESG Databooks, Integrated Reports, and Response to a CDP's Climate Change Questionnaire.

Ends



**Disclaimer regarding forward-looking statements**

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