



Strategies and Initiatives based on Climate-Related Risks, Opportunities and Scenario Analysis

September 12, 2023
Benesse Holdings, Inc.

Revised Version

“Well-being” in society and for the future

Benesse promotes sustainability efforts as we embrace the Benesse Group Sustainability Vision. We aim to contribute to all the Sustainable Development Goals (SDGs), especially focusing on Goal 4 to ensure “quality education.” By providing environmental educational services tailored to children’s development stages, we take proactive measures against climate change based on a better understanding. We have set our greenhouse gas (GHG) emissions reduction targets for 2030 and 2050 as we accelerate our transition towards carbon neutrality.

Benesse will accelerate its sustainability journey with the goal to “pass on a rich global environment to children, the exchange students from the future”.

※ Please click here to view the “Benesse Group Sustainability Vision”

<https://www.benesse-hd.co.jp/ja/sustainability/vision/index.html>

Benesse publicly declared its support for the Task Force on Climate-Related Financial Disclosures (TCFD), established by the Financial Stability Board(FSB), and its recommendations on 23 July 2019. It was the first education business operator in Japan to do so.

Benesse Corporation is committed to reducing Scope 1 and 2 GHG emissions 100% by 2050 (from the 2018 base year) in line with the WB2°C Scenario. It is also committed to reducing Scope 3 GHG emissions 39.4% by 2050 in line with the WB1.5°C scenario.

We have been using our Integrated Reports and CDP to disclose climate-related information, but we will further deepen our analysis of how climate-related opportunities and risks would affect our business while enhancing disclosures on our initiatives. Based on TCFD recommendations, Benesse will disclose information on climate-related “governance,” “strategy,” “risk management,” and “metrics and targets.”

Benesse Group Environmental Policy

Environmental issues are an important global priority. We believe that corporations should fulfill their duty by actively promoting environmental efforts. To achieve its Corporate Philosophy “Benesse = Well-Being,” the Benesse Group has positioned “environment” as a key management priority and works strenuously on environmental initiatives by taking into account its business domains that center around education and childcare, language/global leadership training, and senior/nursing care.

We will adhere to all environmental laws and regulations in our environmental efforts. We will also have every person involved in our business proactively take part in environmental activities while working to continuously upgrade the environmental management systems and our environmental performance. Our activities focus on the following areas:

(1) Promote climate change countermeasures and environmental consciousness in our products and services, as well as in sales and other activities

We promote environmentally conscious design principles, which include avoiding the use of hazardous substances, promoting climate change countermeasures through resource conservation, GHG emissions reduction, preserving biodiversity and water resources and advancing water efficiency to ensure that we provide safe, low environmental impact materials. We apply these principles across all our products, services, and marketing tools.

(2) Encourage energy conservation and waste reduction to tackle climate change, promote recycling, the preservation of biodiversity and water resources and advancing water efficiency

We work to prevent environmental pollution and reduce the environmental impact in the course of business activities by promoting climate change countermeasures to reduce GHG emissions, including energy conservation and waste reduction, recycling, the preservation of biodiversity, the conservation of water resources and the efficient use of water as we tap into new technologies and other means.

(3) Engage with society

We leverage the unique characteristics of each of the Group's businesses to collaborate with society and local communities in environmental activities that promote environmental education, community programs and other activities to tackle climate change through the reduction of GHG emissions, the preservation of biodiversity, the conservation of water resources and the efficient use of water.

This Environmental Policy will be disseminated among all employees and other personnel involved in the Group's business activities and will also be disclosed to the public.

Benesse addresses climate change issues and other sustainability and ESG agendas through its governance structure as below:

- **Representative Director and President, CEO of Benesse Holdings:**

Holds the ultimate responsibility for ESG initiatives including climate change

- **Sustainability Promotion Committee :**

The committee is chaired by the Managing Executive Officer in charge of Sustainability and ESG and consists of full-time directors including the President and Representative Director, and business unit managers. The committee determines policies on ESG issues and monitors the progress of these activities. The activities of the Sustainability Committee are reported to the Board of Directors.

- **Committee Members**

Chairperson	General Manager, Sustainability Promotion Division
Committee Members	CEO / Benesse Holdings Full-time Director Head of each company of Benesse Corporation and Benesse Style Care Other persons appointed by the chairperson

Reviewing Climate-Related Strategies and Initiatives

Based on the hypothetical future of climate change and consequent changes affecting the world, we predicted society in 2030 and 2050 in the context of 2 scenarios of limiting global warming to WB2°C and 4°C. Since the Well-Below 2°C level target, certified by SBTi (Science Based Targets initiative) in May 2021, was updated to a "1.5°C" target, the WB2°C scenario analysis conducted in 2020 was changed to a scenario of 1.5°C and re-analyzed. The "1.5°C" target was updated to "1.5°C".

- Climate-related risks and opportunities were identified, followed by scenario analysis based on TCFD recommendations as below:



Re-analysis with 1.5°C scenario in 2022, reflecting additional measures

◆ Identify climate-related risks and opportunities, assess materiality

The risks and opportunities that affect Benesse were analyzed based on the two axes of “Probability of Occurrence” and “Level of Impact”

Definition of Probability of Occurrence and Level of Impact

● Probability of Occurrence – Transition Risks

3 : already present/most likely 2 : partially present/likely 1 : latent/less likely

● Probability of Occurrence – Physical Risks

3 : Once every few years 2 : Once in 10 years 1 : Once in 100 years

● Level of Impact

Large : 100 million JPY or more Medium: 10 million JPY or more to less than 100 million JPY
Small: less than 10 million JPY

◆ Scope of the Analysis

Domestic Education Business of Benesse Corporation

(accounts for about 40% of sales of Benesse Holdings, Inc.)

※ Please click here to view the outline of the “Domestic Education Business”

<https://www.benesse.co.jp/>

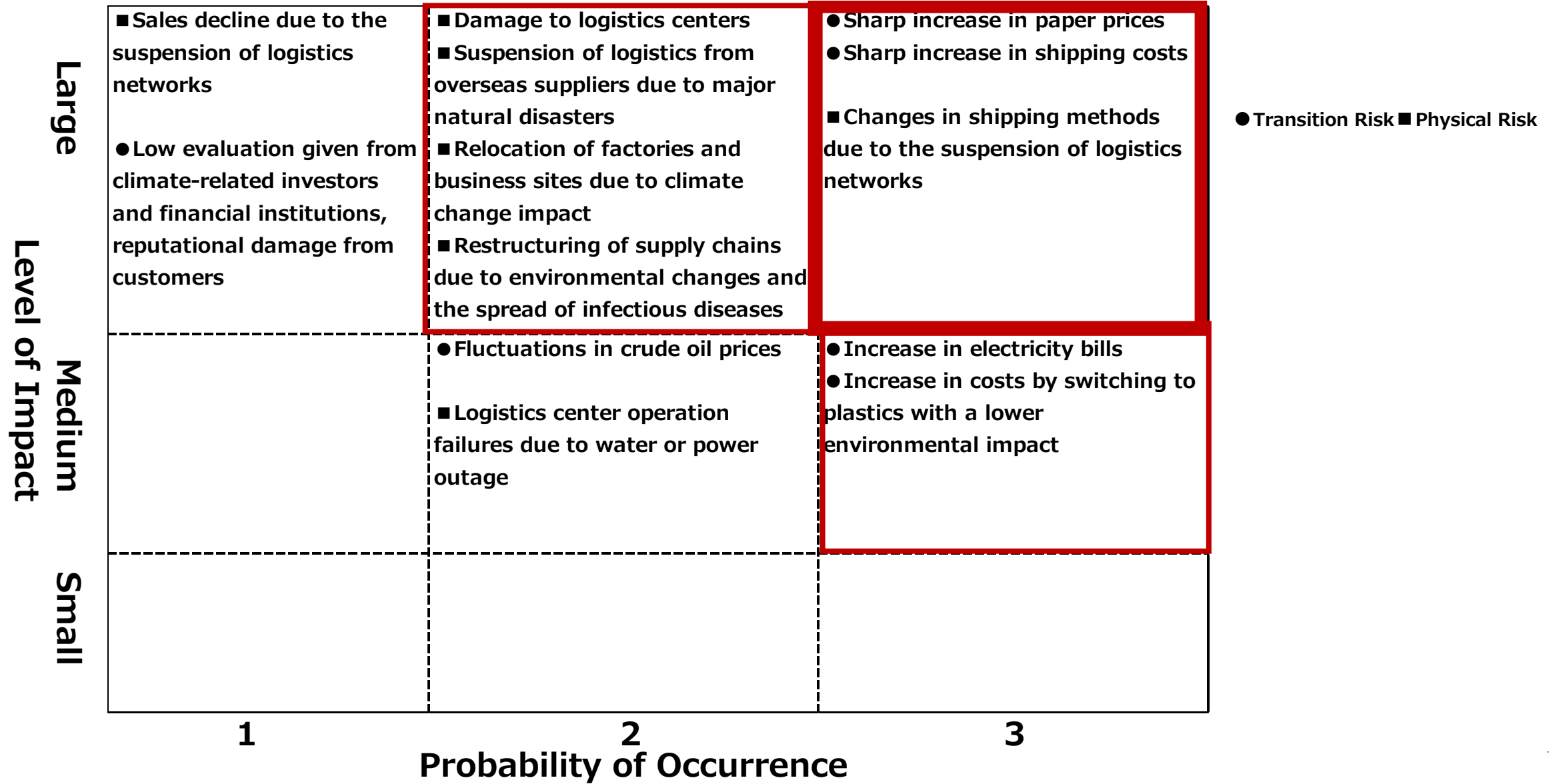
◆ Time Horizon

Medium-term: by 2030 【GHG emissions reduction target year (SBT Certified) 】

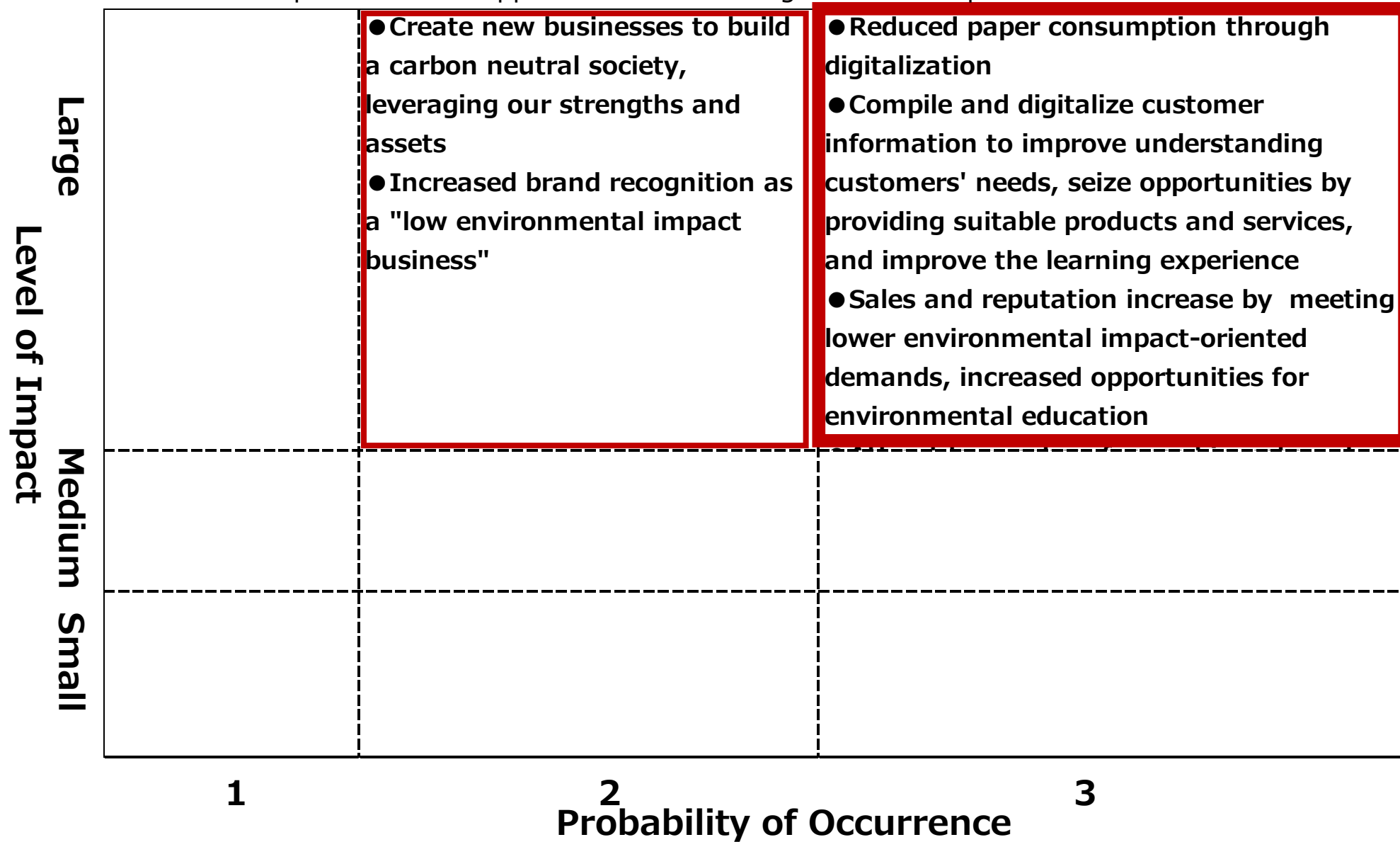
※ Scope 1 and 2 WB2°C certified, 1.5°C target under reapplication, Scope 3 2°C target certified

Long-term: by 2050 【Long-term GHG emissions reduction target year (SBT Certified) 】

Based on the probability of occurrence and level of impact, we have identified “sharp increase in paper prices and shipping costs,” “changes in shipping methods due to suspension of logistics networks during disasters,” “damage to our logistic centers” and “restructuring supply chains” to be serious risks to our business with a large financial impact.



Based on the probability of occurrence and level of impact, we have identified “offering new products and services that harness digitalization,” “reduced paper consumption,” “increased demand for environmental education,” and “supply chain management to differentiate from other companies” to be opportunities with a large financial impact.



● Definition of scenarios:

Based on SBT net-zero target settings, our scenario limits global warming to no more than 2°C by 2100 (Well Below 2°C)
Our business-as-usual scenario, without any efforts made to limit CO₂ emissions, predicts a temperature rise of 4 °C by 2100.

※In the "Net Zero by 2050 - A Roadmap for the Global Energy Sector" published by the International Energy Agency (IEA) in its "World Energy Outlook 2021 (WEO 2021)," the IEA has identified a number of scenarios for achieving a decarbonized society and limiting temperature increase to 1.5°C above pre-industrial levels (Net Zero Emissions). The "Net Zero Emissions" scenario is a scenario in which a decarbonized society is achieved, and the temperature increase is limited to 1.5°C above pre-industrial levels, while the "STEPS" scenario is a scenario in which the targets and policies proposed by each country in the Paris Agreement are built on top of each other. These scenarios were referenced. In addition, the SSP1-1.9 scenario, which assumes a 1.5°C increase in temperature rise in 2100 compared to pre-industrial levels, and the SSP5-8.5 scenario, which assumes an increase of more than 4°C, were referenced in Working Group 1 (WG1) released by the UN Intergovernmental Panel on Climate Change (IPCC) in its Sixth Assessment Report (AR6) cycle.

● Target Area: Japan and its supply chain in China (Guangdong, Shanghai), Vietnam

● Reference Data in Scenario Definition

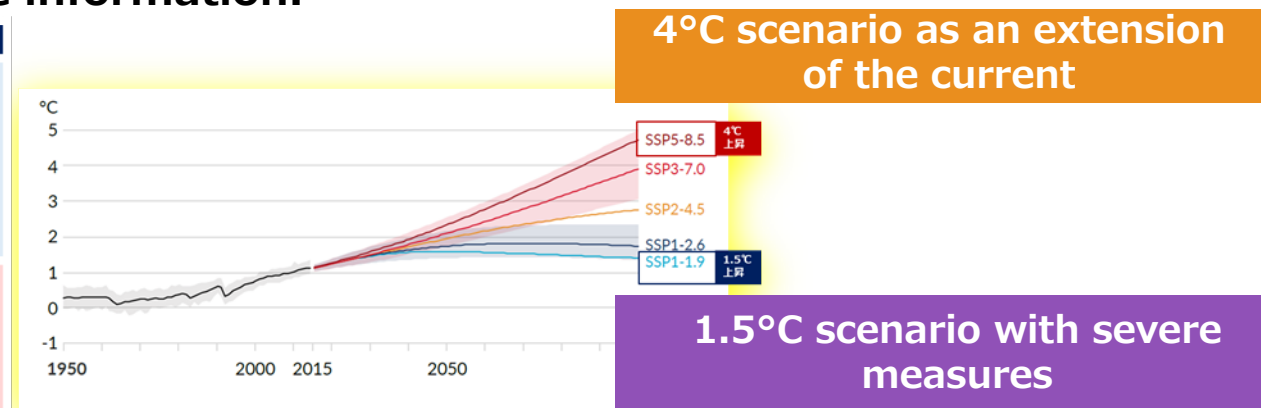
- IEA World Energy Outlook 2020,2021
- IPCC Fifth Assessment Report, IPCC 6th Report Working Group 1 (WG1) and Working Group 2 (WG2) Report
- Physical Risks: Hazard maps issued by local municipalities
- Carbon Tax: World Energy Outlook 2020,2021

We have drawn the scenarios as shown on the right, based on the reference data

- 1.5°C in 2030 is based on the price for developed countries (130USD/t-CO₂) in the WEO2021 Net Zero Emissions by 2050 Scenario.
- 4°C in 2030 is based on the EU price (65USD/t-CO₂) in the WEO2021 Stated Policy Scenario.
- 1.5°C in 2050 is set from the price in developed countries (250USD/t-CO₂) in the WEO2021 Net Zero Emissions by 2050 Scenario.
- 4°C in 2050 is set from the EU price (90USD/t-CO₂) in the WEO2021 Stated Policy Scenario.

Benesse defines the future society under the two scenarios as below, based on a number of global frameworks on climate-related scenarios as reference information.

scenario	future society	Referenced scenario
1.5°C scenario	A world with an average temperature increase of 1.5°C by 2100 -Aggressive legislation and technological innovation, including significant introduction of renewable energy and carbon taxes -Consumers also become increasingly decarbonisation-oriented, leading to changes in lifestyles. ⇒ Increased legal, regulatory and reputational risks associated with the transition to a decarbonised society	IEA : Net Zero Emissions by 2050 Scenario (World Energy Outlook2021) IPCC : SSP1-1.9 (AR6 WG I)
4°C scenario	A world with an average temperature increase of 4°C by 2100 -Lack of progress in the transition to a decarbonised society, including the introduction of renewable energy and a carbon tax -An increase in extreme weather events due to climate change, more frequent flooding and increased risk of infectious disease outbreaks ⇒ Increased impact of physical risks as an effect of climate change	IEA : Stated Policy Scenario (World Energy Outlook2021) IPCC : SSP5-8.5 (AR6 WG I)



Under the Corporate Philosophy of “Benesse = Well-being,”
Benesse aims to achieve the Well Below 1.5°C Scenario for the children of the future.

	Well Below 1.5°C Scenario	4°C Scenario
2030	<p>It is anticipated that one of the transition risks climate-related “policies, laws and regulations” will be further tightened.</p> <p>Growing level of environmental awareness will increase opportunities for environmental education and raise demand for the Domestic Education Business, while a transitional scenario comes with increases in supply chain costs including the introduction of carbon tax etc..</p>	<p>Warmer temperatures will increase catastrophic disasters which is one of the physical risks.</p> <p>Business activities will be exposed to wide-ranging massive impacts that will affect product users or customers, employees and their workstyle, evaluation from investors and disruption in supply chains. It is anticipated that initiatives and opportunities will center around disaster countermeasures.</p>
2050	<p>A net-zero decarbonized society is achieved. Sustainability awareness will permeate society, products and services on the market will have virtually zero emissions, and reputational damage will increase if efforts to strengthen regulations are insufficient.</p> <p>The Domestic Education Business will center around measures taken for a transitional scenario such as increasing power efficiency or contributing to reduce CO2 emissions through DX.</p>	<p>Physical risks will continue to be exacerbated after 2030. Temperatures will continue to rise, causing irreversible environmental changes that will create numerous social problems.</p> <p>The Domestic Education Business will also center around measures taken against exacerbating disasters, which will undermine the stable supply of products and services on a monthly basis.</p>

Evaluate the materiality of “risks and opportunities” of Benesse (Domestic Education Business) from the perspective of financial impact.

Materiality

•
High**● Transition Risks**

- Increase in educational material shipping costs due to “tightening of policies, laws and regulations”

● Physical Risks

- Exacerbation of the spread of infectious diseases and extreme weather conditions (acute)
⇒ Damage at logistics hubs (major), restructuring of the logistics networks due to damage, procurement failures from overseas suppliers, changes in manufacturing countries, etc.

● Opportunities

- Changes in consumers (rising environmental awareness)
- Competitive advantages gained by innovative environmental technologies
- Increase in corporate value by implementing initiatives to preserve the global environment and public disclosure of results

Materiality

•
Mid**● Transition Risks**

- Sharp increase in energy costs (electricity use at offices)
- Switch to alternative materials due to tightening of policies and regulations (recycled plastics, etc.)

● Physical Risks

- Damage at logistics hubs (medium) ⇒ Increase in flood damage

Materiality

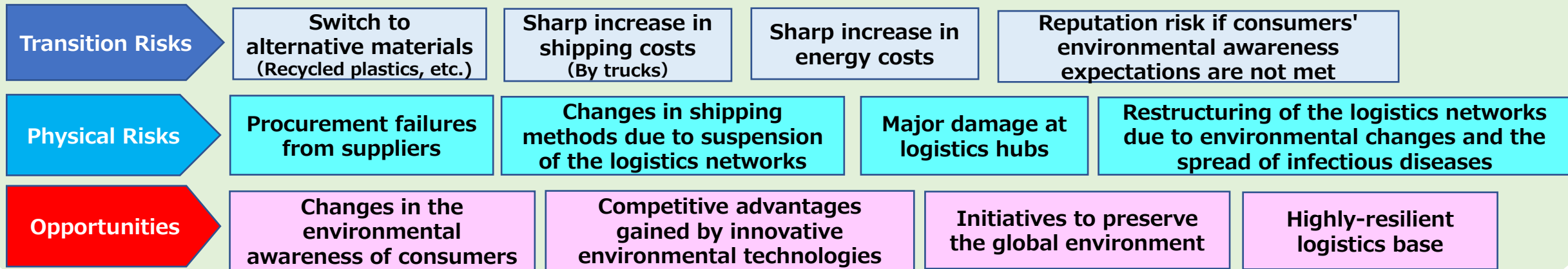
•
Low**● Physical Risks**

- Damage at logistics hubs (minor) ⇒ Damage to solar panels

Scenario Analysis · Results

- **Transition Risks:** Negative impact on business activities is anticipated through the sharp increase in the prices of rare metals used in digital learning materials as well as energy prices caused by the introduction of a carbon tax. Tightening of environmental policies and regulations may also restrict materials used in the learning materials and teaching equipment delivered monthly.
- **Physical Risks:** Negative impact on business activities is anticipated as our value chain may be disrupted by more frequent occurrences of serious disasters and infectious diseases, leading to hampering the regular delivery of learning materials to our customers on a monthly basis.
- **Opportunities:** It is anticipated that ethical consumption and green consumption will progress, spurred by rising environmental awareness that reflects market changes. Our corporate value will increase through product and service development that taps into technological innovation in environmental functionality and digitalization, initiatives to preserve the global environment, and public disclosure of the results of such activities.

Elements that have great impact on Benesse

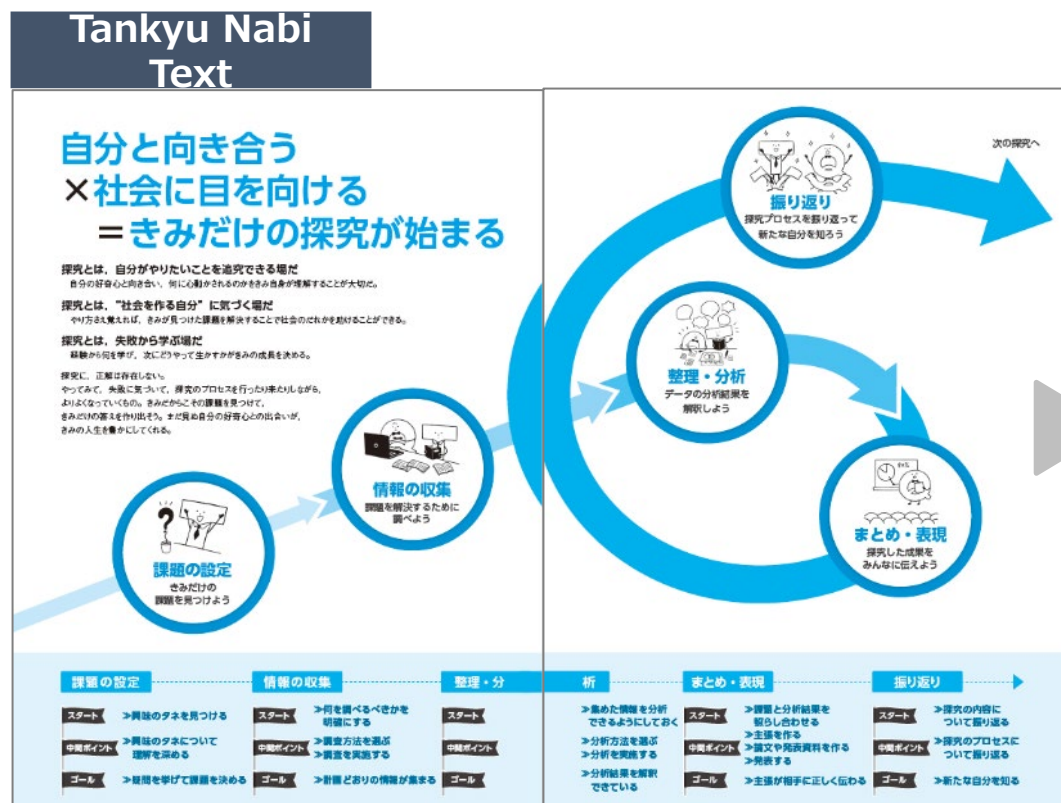


Future Strategies and Initiatives

- **Transition Risks:** Reduction in risks through research into alternative materials to promote CO2 reductions, resource circulation initiatives (recycling), reductions in shipping costs through digital learning materials, reduction of GHG emissions through energy conservation and other office activities, and targets setting for renewable energy introduction and promotion of initiatives
- **Physical Risks:** Reduction in risks through the decentralization of production bases, securing alternative means of transport, strengthening of flood control measures at logistics hubs, etc.
- **Opportunities:** Promotion of new environmental education, reflecting innovations in environmental technologies on products, services and marketing activities based on changes in consumers.

Environmental Education Support① “Tankyu Nabi (Inquiry Navigator)”

Benesse offers content to learn about the “inquiry-based learning process” and “necessary approaches” that support learners to practice inquisitive ways of thinking and deepening their understanding of global warming based on actual social issues.



Tankyu Nabi Social Issue

探究ナビ Social Issue 資料集

目標13 気候変動に具体的な対策を

「温暖化現象」

「温暖化現象」とは
世界の平均気温は1880～2012年の期間で0.85度上昇している。1900年代半ば以降の温暖化は、工業化に伴う二酸化炭素濃度の増加によるものであることがほぼ確実で、早急な対策が求められている。

温暖化現象が南の国を沈める？

温暖化現象が及ぼす影響の一つに、「海面の上昇」がある。これにより、低地国や島国は、この予測によれば、数百年後には最大82センチ、温暖化対策がうまくいった場合でも25センチ以上、海面が上昇する。低地国や島国は、水没してしまうかもしれない。日本は大丈夫かな。

うん、日本も心配だけど、南太平洋の島国であるキリバスやツバルはもっと差し迫っているらしい。海面の上昇が進んだら人が住めなくなる恐れがあるから、住民の移住を求めていると聞いたことがあるよ。そうだったときの受け入れを要した国もあるんだって。

国が沈むかもしれないなんて本当に大変なことだよ。二酸化炭素を排出してきた先進国の一員として、温暖化現象を食い止めるために自分でもできる範囲のことをやろうと思うよ。

同じ気持ちだよ。でもさ、これだけスケールの大きな問題だよ。関心を持つ一部の人が個人レベルで取り組むことに、どこまで温暖化現象を防ぐ効果があるんだろうか、とも思ってしまうんだ。二酸化炭素の排出量を一気に減らせるようないい対策、ないのかな。

温暖化対策が難しい理由の一つは、二酸化炭素排出量の減少と経済成長が簡単に両立しないから。じゃ、この両立をめざそうと各国は工夫を重ねている。政治の面では、例えば「炭素税」という、化石燃料に課税する方法がある。日本でもこれに近い「地球温暖化対策のための税」が導入されている。科学技術の面では、CCSという二酸化炭素を地中に埋める技術が日本を含め世界で試みられている。これらの効果、メリット・デメリットはどんなものだろう。ほかにも効果的な対策はないかな。

調べるとさらに広がる！
①関連キーワード IPCC (気候変動に関する政府間パネル) / パリ協定 / 環境問題 / 温暖化 / CCS・CCUS

興味のあるトピック、内容を自由に記入しよう。

リサーチガイドで調べよう！

Benesse 26

Environmental Education Support② “Benesse STEAM Festival”

This is an event to share inquisitive learning among junior high school and high school students around Japan, with SDGs becoming a popular theme. As well as research and empirical studies, some students also develop apps. In FY 2022, the event was held on March 18 and 25 and was attended by many junior and senior high school students interested in tackling environmental issues.



TOP 主催者とサポーター フェスタ概要 開催レポート エントリープロジェクト



3/18(土)・3/25(土) 2週連続開催！

ベネッセSTEAMフェスタは、中高生の皆さんが取り組んでいる
探究・研究を持ち帰り、学び合い、発表するオンラインイベントです。

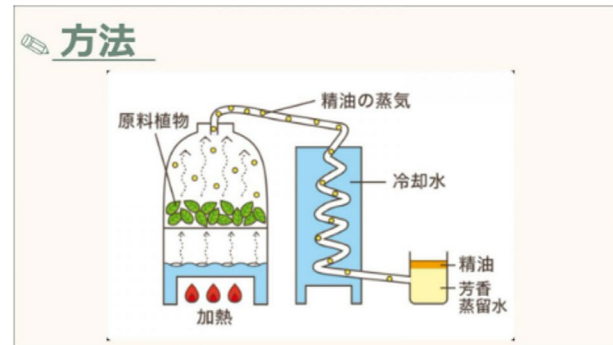
このイベントの一番の目的は成果発表ではなく、学び合いです。探究活動の成果が出ていなくても構いません。
全国から参加する中高生や先生に加え、様々な分野で活躍するビジネスパーソンや研究者も「社会人ゲスト」として参加し、皆さんの活動を応援します。

カラマツの消臭効果を検証し、消臭スプレーの製品化に成功

メーカー部門

発表テーマ 木曽のカラマツの余った枝や葉を使って消臭スプレーを作る

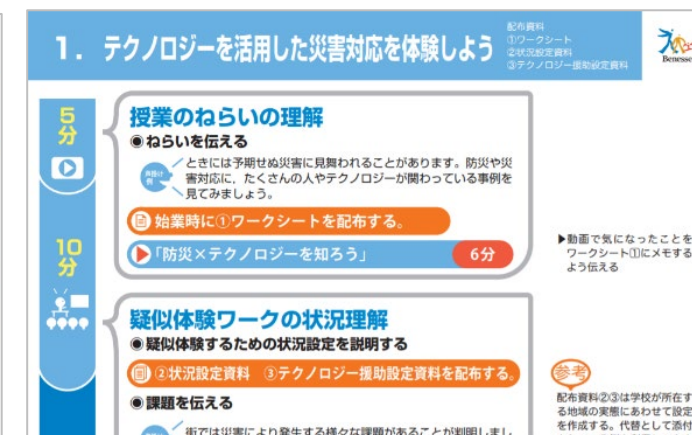
発表者 長野県松本県ヶ丘高等学校 チーム澤守



スライド3 精油抽出機を自作し、カラマツとヒノキの精油とエッセンシャルウォーターを抽出しました。

Environmental Education Support③ “STEAM Library”

Benesse developed content on the utilization of technology in disaster prevention and risk reduction, as part of the STEAM Library in the “Mirai no Kyoshitu (Future Classroom)” Project of the Ministry of Economy, Trade and Industry released in March 2021. The course consists of 8 video clips, worksheets, teaching plans for teachers, and supplementary materials. The teaching materials are designed to support high school students to explore local disaster prevention and disaster mitigation based on hazard maps and statistical information of their own community, taking into account the situation of disaster occurrence in Japan and the world, and to think about robots that can be a solution together with universities, companies, and local governments as examples of technology application to disaster prevention and disaster mitigation they think about. The project is designed as a learning support material for high school students. In FY2021, the program was incorporated into school classes, and students who took the course commented, "It gave me an opportunity to slow down and think about disaster, something that is familiar to us, but we have not thought about deeply," and "It was interesting to come up with new ideas by combining materials and information."



- **Board of Directors, Sustainability and ESG Committee**

The committee is chaired by the Managing Executive Officer in charge of Sustainability and ESG and consists of full-time directors including the President and Representative Director, and business unit managers. The committee determines policies on ESG issues and monitors the progress of these activities. The activities of the Sustainability Committee are reported to the Board of Directors.

- **Major Subsidiary Benesse Corporation**

Benesse Corporation has been ISO 14001 certified since 2004. The company works to reduce the environmental burden including GHG emissions reduction and to provide environmental education, based on annual plans created by each division, tailored to different customers and business stages. The company also offers online environmental training for all employees to build awareness of environmental management.

● Reduction targets for Scope 1 and 2 and Scope 3: Percent reduction based on the base year (2018) as 100%

Fiscal year ended March 31 of each year

	Every fiscal year **	2030 **	2041	2050 *
Reduction rate for Scope 1 and 2 using 2018 as the baseline year	4.4%	52.8%	100%	100%

* Reduction target has been certified by SBTi

[Date of revision February 18, 2022]

** 1.5°C target update pending with SBTi (as of December 31, 2021)

Fiscal year ended March 31 of each year

	Every fiscal year	2030	2050
Reduction rate of Scope 3 using 2018 as the baseline year	1.23%	14.8%	39.4%

● KPI : Scope 1, 2 and Scope 3 Reduction (actual) : Please refer to the following URL

<https://benesse-hd.disclosure.site/ja/themes/148#1002>

● KPI : Paper Consumption Reduction (actual) : Please refer to the following URL

<https://benesse-hd.disclosure.site/ja/themes/149#1008>

● KPI : Renewable energy ratio target : 50% in 2024, 100% in 2041

Detailed Documents

- Explanation for the Business Impact of the “Risks” Identified (P.19)
- Explanation for the Business Impact of the “Opportunities” Identified (P.20)
- Details on the Analysis of “Risks” / Impact Evaluation (P.21)
- Details on the Analysis of “Opportunities” / Impact Evaluation (P.22)
- Details on Future Strategies / Initiatives (Risks) (P.23)
- Details on Future Strategies / Initiatives (Opportunities) (P.24)
- Image of Our Society in 2030 (WB2°C, 4°C) (P.25)
- Image of Our Society in 2050 (WB2°C, 4°C) (P.26)

Risks		Evaluation	Impact on Business	Risks		Evaluation	Impact to Business
T r a n s i t i o n R i s k s	Sharp increase in paper prices	Quantitative	Supply-demand balance for paper will worsen due to sector restructuring, concern over stable procurement of forest resources, paper becomes more costly if paper manufactureres pass on capital expenditures for low-carbon paper to sales prices.	P h y s i c a l R i s k s	Changes in shipping methods due to suspension of logistics networks	Quantitative	When exacerbating extreme weather conditions suspend rail freight traffic, need to rely on alternative shipping methods with extra costs to be borne for delivering learning materials to customers.
	Sharp increase in shipping costs	Quantitative	① Shipping companies will pass on costs for switching to electric vehicles or renewable energy facilities to shipping fees. ② Shipping costs for learning materials and direct mail become more expensive if shipping companies add carbon taxes to shipping fees.		Damage to logistics centers	Quantitative	Climate change exacerbates extreme weather conditions and can trigger massive rainstorms or flooding that may cause damage to logisitic centers and result in costly repairs.
	Increase in electricity bills	Quantitative	Currently electricity derived from renewable energy is more costly than fossil fuels. Electricity bills will increase by switching to electricity derived from renewable energy.In addition, higher single material and fuel costs may be passed on to fossil-derived power sources, in which case the price of fossil-derived electricity will also be higher.		Suspension of logistics from overseas suppliers due to major natural disasters	Quantitative	Climate change exacerbates extreme weather conditions and can trigger massive rainstorms or flooding in the areas of China and Vietnam where we have our suppliers. If there are shipment delays from suppliers, we need to rely on alternative shipping methods or procure alternative components with extra costs to be borne.
	Increase in costs by switching to plastics with a lower environmental impact	Qualitative	Need to switch suppliers of plastic packaging materials if laws and regulations (public procurement principles or ecodesign directives) are enacted and set utilization rates for recycled or bio plastics. Introdution of a plastic packaging tax can result in cost increase, while a tax on virgin plastics will reinforce cost competitiveness of recycled plastics.		Sales decline due to suspension of logistics networks	Quantitative /Qualitative	When exacerbating extreme weather conditions suspend logistics networks, making it impossible to deliver learning materials to our customers for more than one month, there may be a one month worth of lost sales.
					Relocation of factories and business sites due to climate change	Quantitative	Climate change can cause chronic changes in tidal and precipitation patterns that may require relocation of business sites with relocation costs to be borne.
				Restructuring of supply chains due to environmental changes and the spread of infectious diseases	Quantitative	Changes in weather patterns or more frequent occurrences of high tides or infectious diseases in areas where we have our suppliers may require switching to suppliers in other areas with additional procurement costs to be borne.	

Opportunities	Evaluation	Impact on Business
Reduced paper consumption by digitalization	Quantitative	Digitalization of learning materials will reduce paper consumption and costs, as well as CO2 emissions.
Compile and digitalize customer information to improve understanding customers' needs, seize opportunities by providing suitable products and services	Quantitative	Use compiled customer data through digitalized learning materials to: ① provide products and services that meet customer needs ② improve the learning experience that will increase membership retention rate and sales.
Increase sales and reputation by meeting lower environmental impact-oriented demands and increased opportunities for environmental education	Quantitative	Market for teaching aids will expand as schools provide lessons on the environment and sustainability with enriched content.
Attract low carbon-focused investments and loans	Qualitative	There are greater chances of gaining credit from long-term investors as a company with outstanding ESG performance. Being selected for inclusion in indices will help investors hold stocks on a stable long-term basis. Can get long-term investments as well as loans where ESG factors constitute part of a lending decision.
BCP that ensures quick recovery, increased trust by supply chain management, differentiates from other companies	Qualitative (Avoid physical risk)	Prompt response in times of climate disaster and building a supply chain that mitigates climate risks will lead to avoiding physical risks.
Create new businesses to build a carbon neutral society leveraging our strengths and assets	Qualitative	Can create new businesses that align with carbon neutrality objectives by tapping into big data and knowledge of behavioural sciences acquired through our business.
Increased brand recognition as a "low environmental impact business"	Qualitative	Can increase brand recognition as a provider of low environmental impact services and enhance customer loyalty, as customers are increasingly focused on carbon neutrality.

- WB1.5℃: Cost increase by “tightening of policies, laws and regulations” and market procurement cost rise.
Changes in consumers’ ideals may result in damage to the brand image.
- 4℃ : Exacerbated extreme weather conditions will increase occurrences of physical risks with greater damage and impact.

		Element Evaluation	Financial Impact Evaluation	Evaluation Results in 2030					
				Well Below 2℃ Scenario			4℃ Scenario		
Risks	Transition			Focus on tightening of "policies, laws and regulations." Overall supply chain costs will increase due to reinforcement of carbon taxes.	Impact	Occurrence	Warmer temperatures will increase disasters (physical risks) with greater damage and impact brought to customers, work styles, investors and supply chains.	Impact	Occurrence
		Carbon Tax	Tax on Scope 1, added to purchased power	Increase in electricity bills (+ 4 JPY/kWh)	Small	High	Increase in electricity bills (+2 JPY/kWh)	Small	High
		Utilization rate regulated for recycled/bio plastics	Utilization rate set for recycled/bio plastics, supply, crude oil price decline	Increase in costs by switching to plastics with a lower environmental impact (Increased supply of bioplastics leads to price decline)	Medium	High	Increase in costs by switching to plastics with a lower environmental impact (Price of bioplastics remains the same as now)	Small	Low
		Secure biodiversity or promote carbon neutrality	Increased price rate of domestic certified paper, reduced consumption through digitalization	Sharp increase in paper (raw material) prices (1.1 times)⇒ Reduced consumption leads to cost cutting	Refer to Opportunities		Sharp increase in paper (raw material) prices (1.1 times)⇒ Reduced consumption leads to cost cutting	Refer to Opportunities	
		Shipping fuel price hikes, Carbon tax	Increase in shipping costs	Sharp increase in shipping costs (learning material shipping costs +25 JPY, direct mail shipping costs +15 JPY)	Large	High	Sharp increase in shipping costs (learning material shipping costs +10 JPY, direct mail shipping costs +5 JPY)	Large	High
	Physical	Exacerbation of extreme weather conditions	Increased flood damage	Changes in shipping methods due to suspension of logistics networks (Torrential rain equivalent to the 2018 West Japan disaster will cause widespread damage in a few days, one possible occurrence anticipated)	Medium	High	Changes in shipping methods due to suspension of logistics network (Torrential rain equivalent to the 2018 West Japan disaster anticipated to occur once, and a Great East Japan Earthquake level disaster will cause extensive widespread damage within a max. 3.5 weeks, one possible occurrence anticipated)	Large	High
			Number of disasters occurring that will suspend manufacturing and shipment in China and Vietnam	Suspension of production and logistics from overseas suppliers due to major natural disasters (no occurrences anticipated)	Large	Low	Suspension of production and logistics from overseas suppliers due to major natural disasters (one possible occurrence anticipated)	Large	Medium
			Damage to solar panels, costs to replace equipment	Damage to logistics centers	Small~Large	Low	Damage to logistics centers	Small~Large	Medium

Keep pursuing cost reduction by digitalization and launching new customer-friendly products and services.
WB1.5℃ Scenario will have a greater impact as a consumer mind shift to reduce the environmental impact will push up the demand for eco-friendly products and services.

		Element Evaluation	Financial Impact Evaluation	Evaluation Results in 2030					
				Well Below 2℃ Scenario			4℃ Scenario		
O p p o r t u n i t i e s				Enhanced environmental awareness brings greater opportunities	Impact	Occurrence	Enhanced environmental awareness brings some opportunities	Impact	Occurrence
	Resource Efficiency	Sharp increase in raw material prices, Increased demand for domestic certified paper, Reduced paper consumption in the company	Reduced papers costs	Paper costs will increase while reduced paper consumption by digitalization will lead to cost reduction	Large	High	Paper costs will increase while reduced paper consumption by digitalization will lead to cost reduction	Large	High
	Products and services	Enhance competitive advantage in environmental performance through innovation	Sales increase	Compile and digitalize customer information to improve understanding customers' needs, seize opportunities by providing suitable products and services, and improve the learning experience	Large	High	Compile and digitalize customer information to improve understanding customers' needs, seize opportunities by providing suitable products and services, and improve the learning experience	Large	High
				Create new businesses to build a carbon neutral society leveraging our strengths and assets	Large	High	Create new businesses to build a carbon neutral society leveraging our strengths and assets	Large	Medium
		Changes in consumer preferences		Sales increase to meet lower environmental impact-oriented demand and increased opportunities for environmental education	Large	High	Sales increase to meet lower environmental impact-oriented demand and increased opportunities for environmental education	Large	Medium
	Market	Improve corporate evaluation by implementing initiatives to preserve the global environment with public disclosure of results	Higher stock prices, attract investments and loans	Attract low carbon-focused investments and loans	Large	High	Attract low carbon-focused investments and loans	Large	Medium
				Increased brand recognition as a "low environmental impact business"	Large	High	Increased brand recognition as a "low environmental impact business"	Large	Medium
	Resilience	Avoid physical risks	Lower acute risk evaluation	BCP that ensures quick recovery, increased trust by supply chain management, differentiates from other companies	Large	High	BCP that ensures quick recovery, increased trust by supply chain management, differentiates from other companies	Large	High

- Transition Risks:
Take concrete actions to reduce costs through work style reform, learning material design and reduction of shipping volume through digitalization. Examine recycling, waste reduction, and using alternative plastics at the same time.
- Physical Risks:
Secure alternative shipping methods to ensure delivery of products and services to customers. Take physical measures against flooding and diversify manufacturing and logistics bases.

		Risks	Strategies and Initiatives
Risks	Transition Risks	Increase in electricity bills	Energy saving through work style reform etc. <ul style="list-style-type: none">• Reduce electricty bills through mid-term renovation plan of company owned buildings (already reduced by nearly 20%, with further 15% reduction planned)• Reduce electricity consumption by 40% by cutting rented office space by half through work style reform• Upload about 70% of servers to cloud computing in three years (around FY 2024)• Work style reform (hybrid work) reduces electricity consumption at offices by 20%, can avoid commuting and business trips, reduce officeequipment usage and promote paperless• Set renewable energy introduction ratio targets and promote initiatives
		Increase in costs by switching to plastics with a lower environmental impact	<ul style="list-style-type: none">• Lean design, recycling and waste reduction of teaching aids and toys• Examine plastics with lower environmental impact and conduct test introduction
		Sharp increase in shipping costs	<ul style="list-style-type: none">• Reduce shipping costs through digitalization
	Physical Risks	Changes in shipping methods due to suspension of logistics networks	<ul style="list-style-type: none">• Secure alternative shipping methods in times of natural disaster• Create BCP and conduct emergency drills and training
		Suspension of production and logistics from overseas suppliers due to major natural disasters	<ul style="list-style-type: none">• Diversify overseas production bases, create BCP for tablet procurement
		Damage to logistics centers	<ul style="list-style-type: none">• Conduct research and take countermeasures against flooding, including land elevation, at logistics and business bases

Keep reducing paper consumption by digitalization and providing customized products and services based on compiled customer data.
Seize opportunities for environmental education, new business creation and attract investments and loans by responding to a consumer mind shift in the WB2°C Scenario.
Embrace opportunities to improve brand recognition by promoting activities to reduce the environmental impact in the company and across the supply chain and provide environmental education. Proactively disclose information on such initiatives.

		Opportunities	Strategies and Initiatives	
O p p o r t u n i t i e s	e f f i c i e n c y	Paper costs will increase while reduced paper consumption from digitalization will lead to cost reduction	Reduce paper consumption by working with teachers, schools and customers to create a highly effective learning style that integrates digital technologies.	Large
	P r o d u c t i v i t y	Compile and digitalize customer information to improve understanding customers' needs, seize opportunities by providing suitable products and services, and improve the learning experience	Based on customer data analysis through digitalization, provide products and services suitable for each customer to improve the learning experience and increase customer satisfaction.	Large
		Create new businesses to build a carbon neutral society leveraging our strengths and assets	Create new businesses that align with carbon neutrality objectives by tapping into big data and knowledge of behavioural sciences acquired through our business.	Large
		Sales increase by meeting lower environmental impact-oriented demand and by increasing opportunities for environmental education	Create new environmental education services together with teachers, schools and customers to get better understanding and support for climate-related measures and build a future for children to live in harmony with the global environment.	Large
	M a r k e t	Attract low carbon-focused investments and loans	• Reduce environmental impact and promote environmental education • Improve information disclosure on the above	Large
		Increased brand recognition as a "low environmental impact business"		Large
	i R e e n s i c i e	BCP that ensures quick recovery, increased trust by supply chain management, differentiates from other companies	• Secure alternative shipping methods in times of natural disaster • Create BCP and conduct emergency drills and training • Diversify overseas manufacturing bases, create BCP for tablet procurement	Large

- WB1.5°C: It is anticipated that costs will increase across the supply chain due to the more rigorous policies, laws and regulations introduced, ranging from carbon tax/border carbon adjustment mechanisms similar to other developed economies, mandatory carbon footprint reporting, preferential measures for renewable energy capital expenditures. Heightened interest in the environment and society will stimulate demand for related content and push sustainable consumption toward the mainstream.
- 4°C : Continued dependence on fossil fuels will exacerbate extreme weather conditions and increase occurrences of physical risks with a serious impact. Forest fires, torrential rain, elevated temperatures and droughts will worsen with higher risks of infectious diseases and food crises. Consequently, business operation costs will increase, and we will need to reduce the impact while striving to achieve the WB1.5°C Scenario.

Image diagram of our society in 2030 (WB1.5°C)

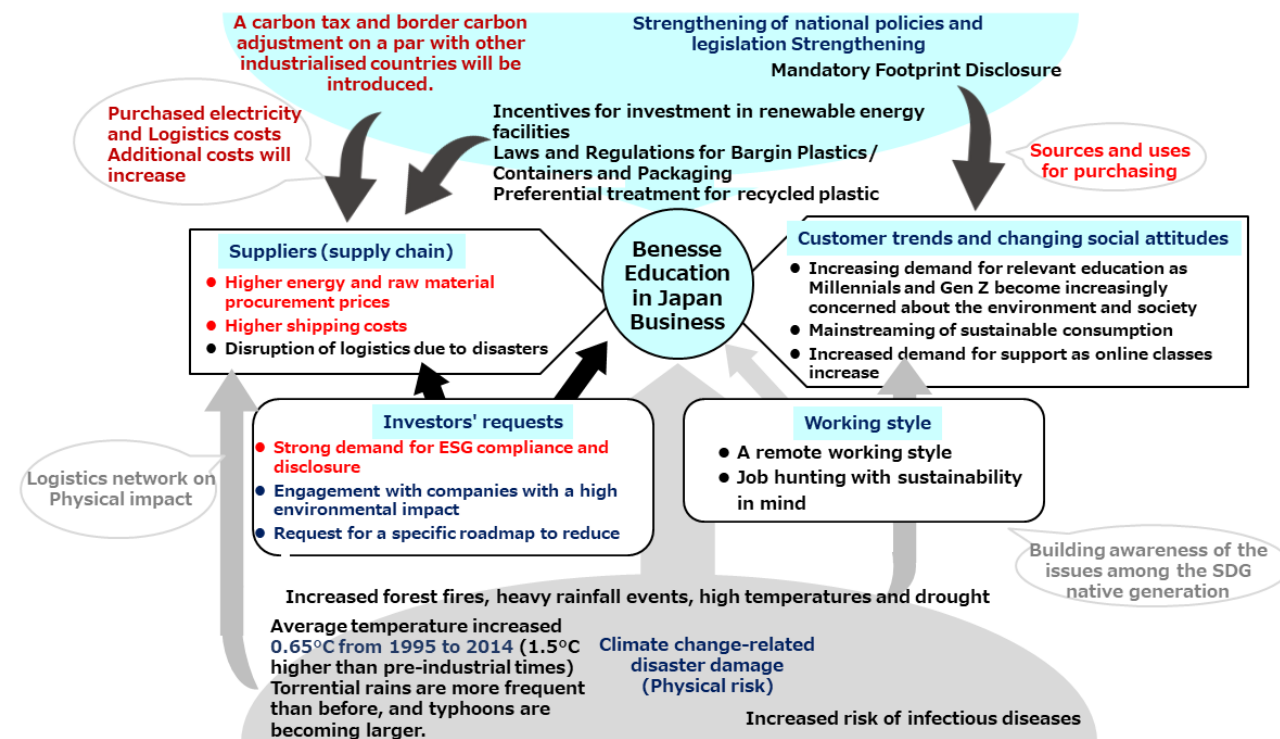
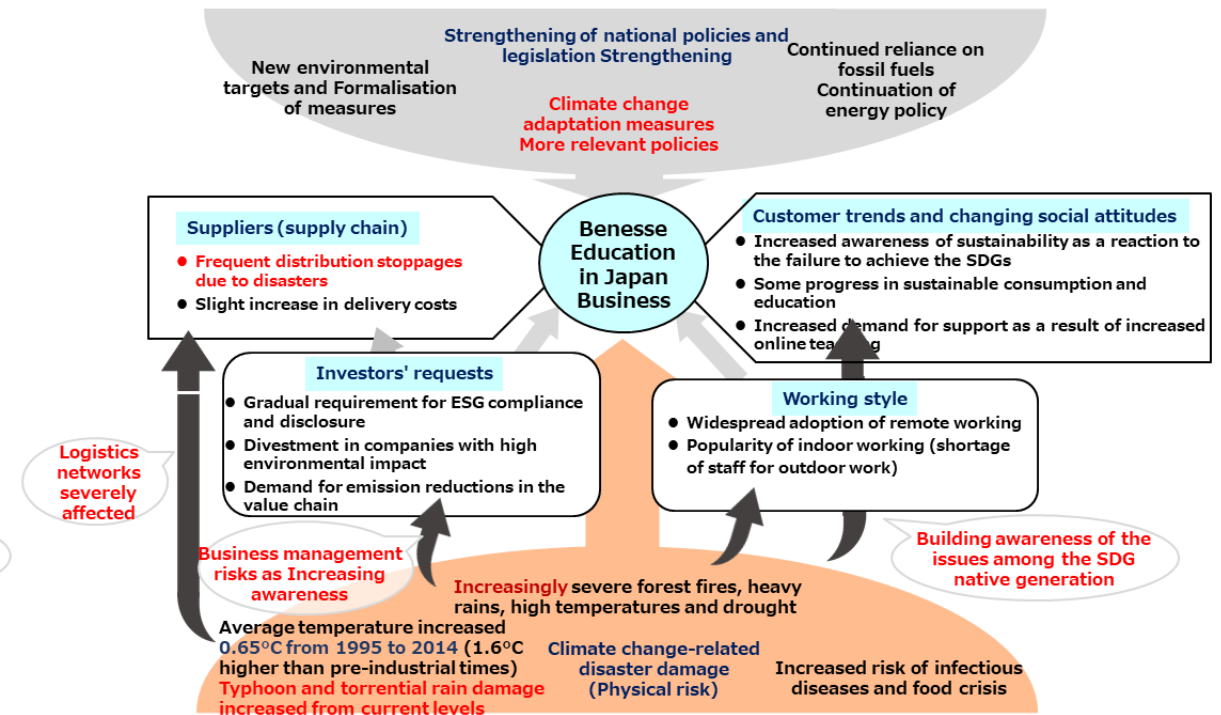


Image diagram of our society in 2030 (4°C)



- WB1.5°C: Proactive national policies and legislation on climate change are progressing, a decarbonized society is being realized, and environmental awareness is permeating society. Environmental perspectives are reflected in consumer behavior and education. The whole economic structure will become sustainable.
- 4°C : Rising global temperatures will exceed the climate tipping point and trigger environmental changes with irreversible devastating consequences, having an enormous impact on the physical supply chain. Social anxiety over health hazards and food crises will increase more frequent occurrences of serious social problems. We must take all possible measures to avoid the 4°C Scenario.

Image diagram of our society in 2050 (WB1.5°C)

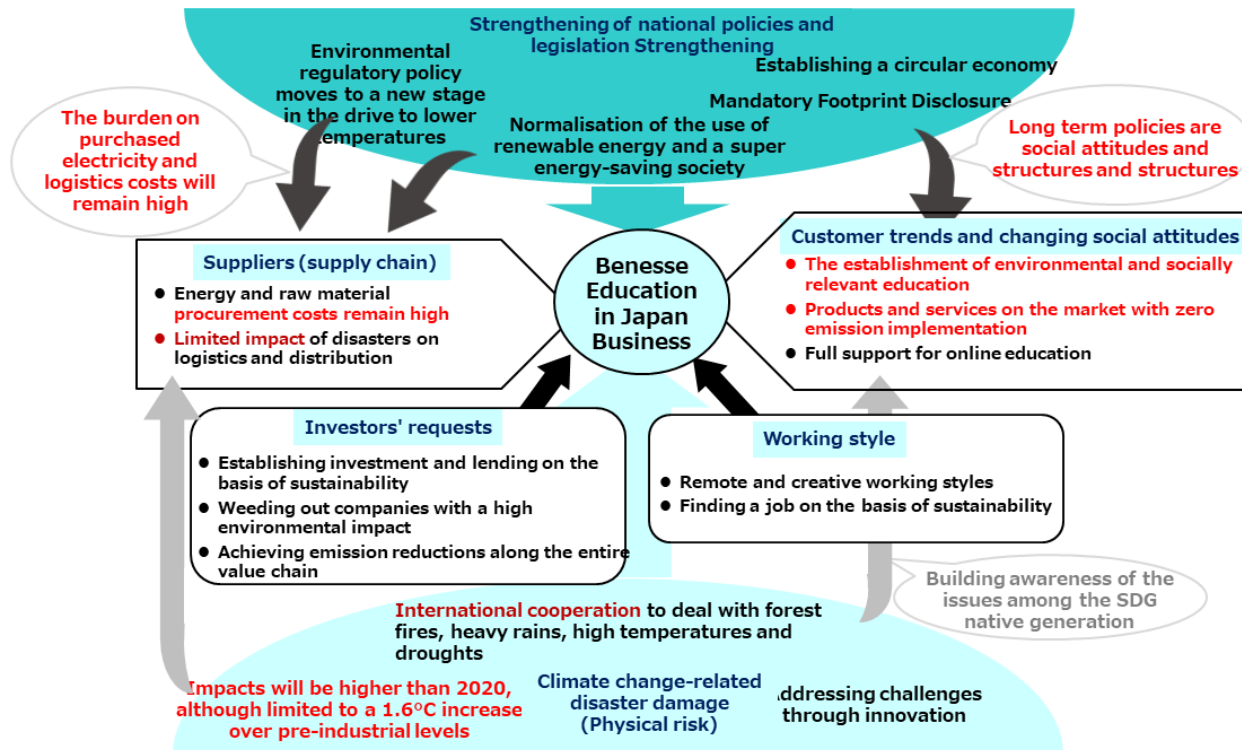


Image diagram of our society in 2050 (4°C)

