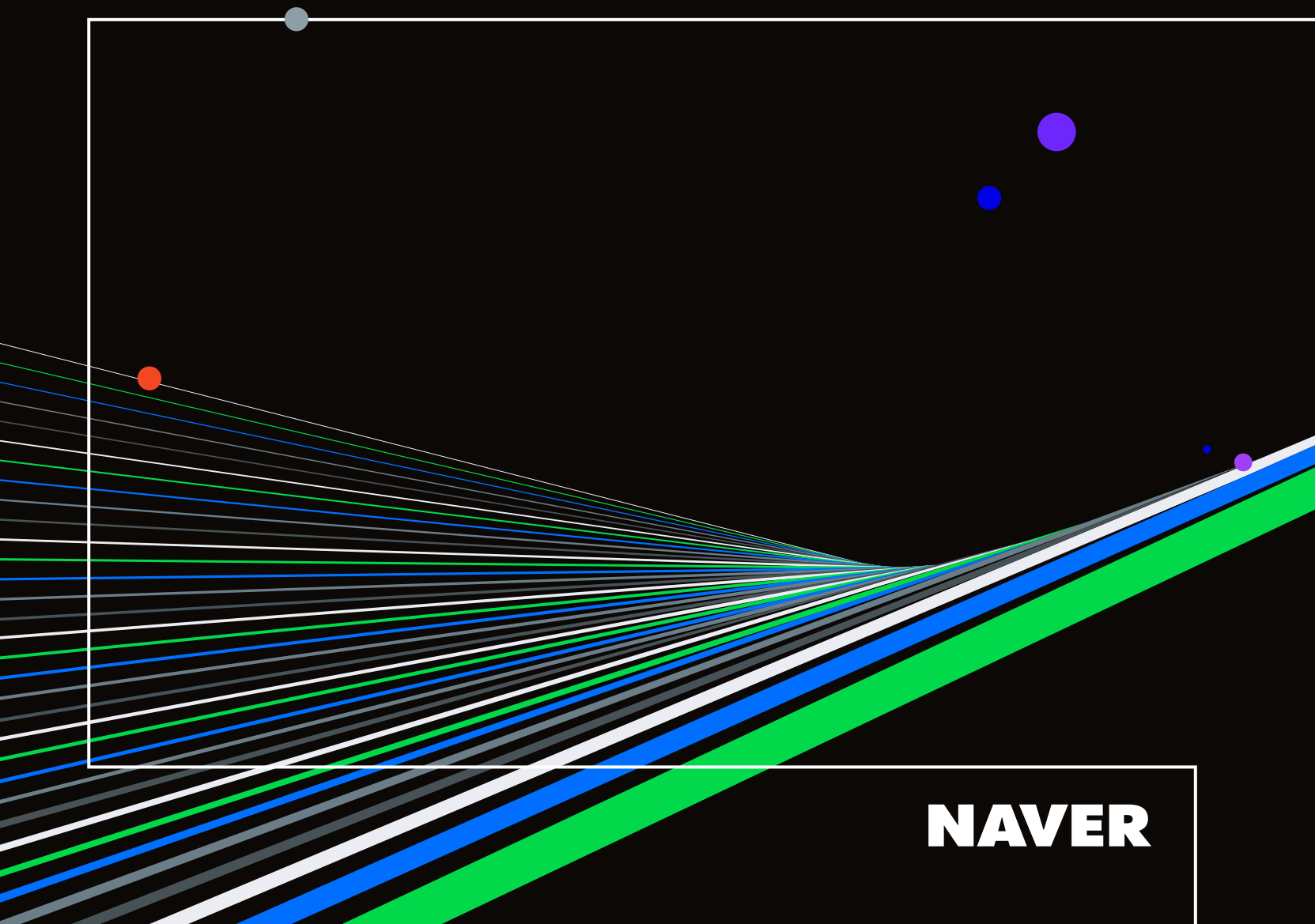
2023 TCFD REPORT

TOWARDS 2040
CARBON NEGATIVE



NAVER

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ABOUT THIS REPORT

OUTLINE

NAVER 2023 TCFD Report, which identifies climate-related risks and opportunities, along with their potential financial impacts, is written in accordance with the disclosure recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD). Through a series of scenario analyses in this report, NAVER aims to proactively prepare for potential financial impacts that could affect the company by analyzing various risk and opportunity factors resulting from climate change. Additionally, this report seeks to enhance NAVER's responsiveness and the effectiveness of its management activities in addressing these issues.

REPORTING PERIOD

This report includes content covering the period from January 1, 2023, to December 31, 2023, adhering to CDP reporting standards and fiscal year criteria, with some significant updates extending into the first half of 2024. Quantitative data from 2021 to 2023 are included for year-on-year comparisons.

REPORTING SCOPE

The scope of this report includes only NAVER Corporation as a standalone entity and not its subsidiaries. In accordance with the CDP standards, the reporting items such as climate change risks, opportunities, and indicators have been considered across business operations including upstream and downstream activities. Data on greenhouse gas emissions and energy use were compiled based on third-party verification results.

REPORTING STANDARDS

Quantitative data, verified by the Korean Standards Association, have been made publicly available to ensure reliability and fairness. Detailed verification opinions are included in the Appendix.

THIRD PARTY ASSURANCE

This report is written in accordance with the TCFD recommendations.

* Although the TCFD fulfilled its remit and disbanded on October 12, 2023, NAVER continues to prepare this report in line with the TCFD recommendations, as the Korea Sustainability Standard Board (KSSB)'s Sustainability Reporting Standards No. 2 on climate-related disclosures has not yet been finalized and applied.

INQUIRIES

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OVERVIEW

Our Climate Vision

The Intergovernmental Panel on Climate Change (IPCC), in its Sixth Assessment Report (2021), stated that it is “unequivocal” that human influence has warmed the atmosphere, ocean, and land on earth. The concentration of CO_2 in the atmosphere is now higher than at any time in at least 2 million years, amplifying the need for urgent reductions in greenhouse gas (GHG) emissions and the development of climate technologies.

NAVER recognizes the importance of the natural environment for ensuring a sustainable future for future generations and has established a “2040 Carbon Negative” strategy to achieve net zero carbon emissions by 2040. To systematically implement this strategy, NAVER is advancing reduction efforts such as enhancing energy efficiency, transitioning to renewable energy, and developing eco-friendly infrastructure, centered around the dedicated department, Green Partnership. In 2023, NAVER introduced renewable energy from hydroelectric power into its office operations through a power purchase agreement (PPA) for the first time in Korea. This secured a stable supply of renewable energy for NAVER 1784, its future-oriented eco-friendly space.

NAVER is also actively participating in global climate initiatives. As the first domestic IT company to join RE100, it is actively promoting climate change responses by supporting and participating in initiatives such as EV100 and the global Carbon Disclosure Project (CDP), thereby affirming its commitment to implementation. Furthermore, as a platform company, NAVER is committed to enhancing the eco-friendliness of its services and creating environmental value. It collaborates with various stakeholders who use NAVER’s services to strive towards achieving the “2040 Carbon Negative” goal.

Moving forward, NAVER will continue to enhance its competitiveness to establish its position as a top-tier ESG management company in the global market. It will progressively pursue Carbon Negative initiatives to respond to the climate crisis and make multifaceted efforts to achieve sustainable growth.

GOVERNANCE

ESG Committee within the BOD

NAVER has established and operates a governance system for general topics of sustainability including climate change response, based on a decision-making structure comprised of ESG Committee within the Board of Directors, dedicated departments, and a working group. This system is responsible for monitoring, supervising, and managing issues and activities associated with climate-related risks and opportunities. The ESG Committee serves as the highest consultative body, spearheading the management of ESG risks and the expansion of business opportunities throughout the company. It receives and resolves issues related to ESG management. After a resolution to change the committee's composition at the fourth regular board meeting in March 2023, the committee includes two outside directors (including the chairperson) and one inside director.

Committee name	Composition	Name of the Committee members (directors)	Key activities
ESG Committee	2 Outside Directors	Byun Jae-Sang (Chairperson) Rho Hyeok-joon	• Review and manage key ESG risks and opportunities • Perform top-level decision-making on company-wide ESG initiatives • Identify business items based on environmental and social sustainability and make related investment decisions • Establish climate change response strategy and direction • Manage ESG information disclosure and external communication • Execute social contribution programs, etc.
	1 Inside Director	Chae Sun-joo	

* As of March 2024

ESG Committee within the BOD

NAVER ESG Committee's Activities in 2023

The ESG Committee within the BOD convenes quarterly, with climate and environmental issues reported at least twice a year. The committee reviews NAVER's mid-to long-term strategies for climate mitigation and adaptation, approves major ESG initiatives, and oversees the management and monitoring of goals and their implementation concerning climate-related issues.

In 2023, the ESG Committee convened four times, addressing key issues including the revision of NAVER's comprehensive ESG strategy, management plans for ESG across its affiliates, the publication of Integrated Report, and contributions towards disaster recovery. In the environmental sector, the committee approved a direct power purchase agreement (PPA) with the Korea Water Resources Corporation for renewable energy (small hydropower), as a tangible step toward achieving NAVER's "2040 Carbon Negative" environmental strategy.

Meeting date (Month)	Major items of agenda	Classification	Participation rate
1st (Feb.)	Company-wide ESG Strategy Revision and Approval of 2023 Executive ESG KPIs	Approval	100%
	2023 ESG Management Guidelines for Subsidiaries	Report	100%
	2023 ESG Report Planning	Report	100%
	Donation for Türkiye and Syria Earthquake Recovery	Report	100%
2nd (May)	Donation for Gangneung Wildfire Recovery	Report	100%
3rd (Jun.)	2023 ESG Report Publication	Approval	100%
4th (Sep.)	Contract with Korea Water Resources Corporation for Renewable Energy (small hydropower)	Approval	100%

Executive Management and Dedicated Organizations

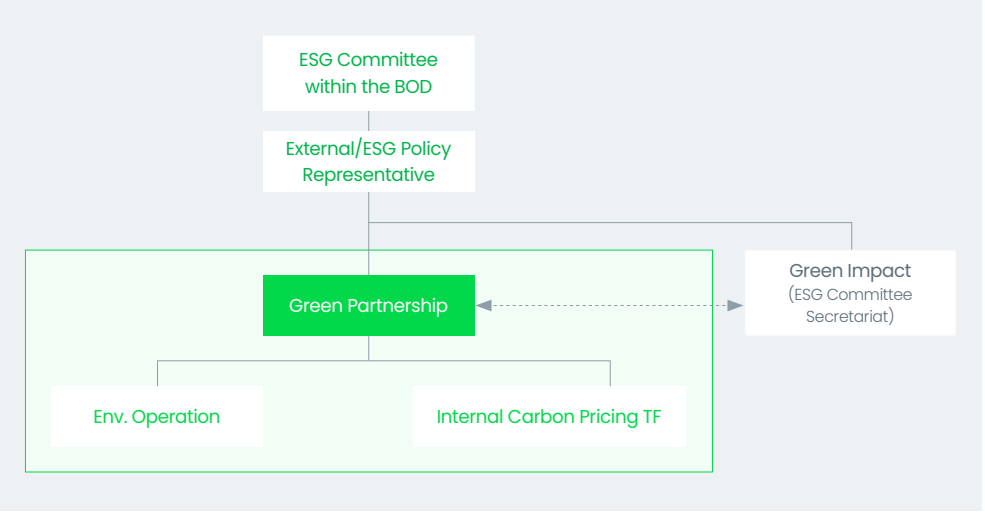
The CEO participates in the decision-making process for executing climate change mitigation and adaptation strategies, investing in ESG projects, and managing various capital financing issues. Particularly, the CEO leads the identification of environmentally sustainable business opportunities within the commerce industry to promote the transition to a low-carbon economy and expand green business prospects.

The Board of Directors approves the annual budget and governs major capital expenditures, acquisitions, and divestitures. Additionally, the External/ESG Policy Representative, a registered executive officer as well as a member of the ESG Committee, oversees strategies to minimize climate change risks and maximize opportunities, underpinned by their authority in shaping NAVER's climate response strategies, related investments, and capital financing. This role actively involves communicating with internal and external stakeholders to clarify NAVER's climate response direction and advance implementation measures. "Green Partnership," an ESG-focused environment department within the External/ESG Policy division, develops and executes policies aimed at transitioning to renewable energy, discovering eco-friendly services, and fostering partnerships to achieve the "2040 Carbon Negative" goal, along with monitoring and reporting on the environmental management system.

"Env. Operation," a working group under the Green Partnership department, manages the setup, operation, improvement, and certification of the environmental management system. It continuously reviews and enhances environmental practices across various business areas and workplaces, taking into account NAVER's businesses. Furthermore, it enhances the environmental management capabilities at each workplace through specialized training in environmental fields. The Internal Carbon Pricing TF, a task force under Green Partnership, develops and implements systems that enhance climate change awareness among employees and involve the supply chain, using an internal carbon pricing approach.

Environmental improvement initiatives are communicated to "Green Impact," a department dedicated to ESG management and a secretary to the ESG Committee, ensuring the initiatives are aligned with NAVER's 7 ESG Management Strategies.

Organization Chart



STRATEGY

Scenario Selection

Following the recommendations of the TCFD, NAVER has identified risk and opportunity factors related to climate change that can have potential and material impact in the short-term, mid-term, and long-term through a series of scenario analysis.

Physical Risks

The IPCC Sixth Assessment Report provides an analysis of future projections for global surface temperature changes from 2021 to 2100, based on Shared Socioeconomic Pathways (SSP) scenarios. SSP scenarios distinguish future socio-economic structures according to the levels of greenhouse gas reductions and the implementation of climate change adaptation strategies.

Type	Description	Global temperature (late 21st century)
SSP1-2.6	Assumes the use of fossil fuels is minimized due to advancements in renewable energy technologies, leading to sustainable and eco-friendly economic growth. It posits that total GHG emissions will decrease to net zero by 2050.	+1.8°C
SSP2-4.5	Assumes a moderate level of climate change mitigation and socio-economic development, with total GHG emissions maintained at current levels until 2050 and then significantly reduced by 2100.	+2.7°C
SSP3-7.0	Assumes passive climate change mitigation policies, delayed technological development leading to a doubling of emissions by 2100, and a social structure vulnerable to climate change.	+3.6°C
SSP5-8.5	Centers on rapid industrial technological development with high use of fossil fuels, leading to a tripling of greenhouse gas emissions and extensive, indiscriminate urban development by 2100.	+4.4°C

NAVER has analyzed physical risks impacting the company using the S&P Global Climanomics® climate modeling analysis tool, based on these four scenarios, ranging from the SSP5-8.5 scenario, where indiscriminate development leads to a 4.4°C rise in global temperatures by 2100 compared to pre-industrial levels, to the SSP1-2.6 scenario, which minimizes the use of fossil fuels.

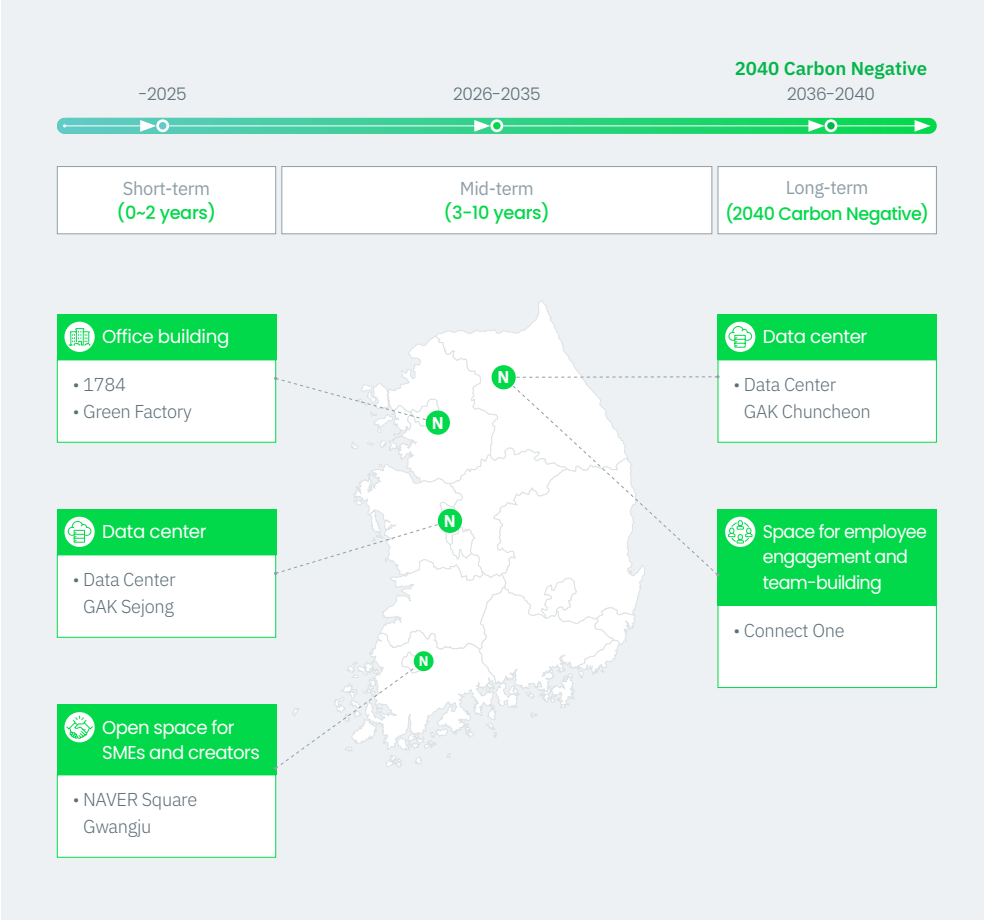
Transition Risks

The TCFD recommendations advise companies to adopt a climate change response strategy based on a 2°C scenario when conducting scenario analysis. In response, NAVER has adopted the Nationally Determined Contributions (NDCs) of Network for Greening the Financial System (NFGS), Net-Zero 2050, and below 2°C scenarios as its main frameworks for assessing transition risks. This adoption also takes into account the level of implementation of South Korea's GHG policies in its financial impact evaluations.

Scenario Selection

Impact Analysis Scope and Timeline

Aligned with NAVER's roadmap to achieve Carbon Negative by 2040, the timelines for analyzing transition risks and opportunities are classified into short-term (up to 2025), mid-term (2026-2035), and long-term (2036-2040, the target year to achieve Carbon Negative by). For physical risks, the timelines are divided into ten-year periods: 2020-2029, 2030-2039, and 2040-2049. The analysis of climate change risks and opportunities is conducted with a focus on NAVER's headquarters and its major domestic business sites.



Identification of Climate Change-related Risk and Opportunity

Analysis of Significant Risks and Opportunities

Identifying a Pool of Risk and Opportunity Factors

Following a review of global climate trends and the climate response measures of other companies in the industry, based on the IPCC Sixth Assessment Report and TCFD recommendations, NAVER has identified a pool of 50 risks and opportunities. The identified pools are categorized into physical risks, transition risks, and opportunities. Specifically, physical risks are divided into acute and chronic categories, while transition risks are broken down into areas such as current regulations, new regulations, laws, markets, technology, and reputation. Taking into account the business relevance, strategic direction, and the geographical characteristics and locations of its major business sites, NAVER selected a total of 18 issue pools.

Risk Factors

PHYSICAL RISKS			
Acute	• Increase in damage to business due to extreme weather such as cyclones and flooding		
Chronic	• Increase in damage to business due to rising average temperatures and changes in weather patterns		
TRANSITION RISKS			
Current Policy	• Increased costs for purchasing carbon credits due to rising GHG emissions	Market	• Decrease in demand and competitiveness due to a lack of response to eco-friendly services resulting from changes in customer behavior • Unforeseen economic risks due to international energy price fluctuations
New Policy	• Increased costs for transitioning to renewable energy due to stricter carbon regulations • Loss of customer trust due to a lack of response to ESG evaluations not closely related to business	Technology	• Increased costs for low-carbon, high-efficiency energy transitions due to growing demands for eco-friendly technology development
Legal	• Increase in climate litigation risks (fines, penalties) due to violations of environmental laws and greenwashing • Increase in climate-related legal risks due to poor supply chain management	Reputation	• Negative image, financial impact, and operational issues due to inadequate disclosure of climate information and ESG reporting • Negative reputation due to poor progress on the 2040 Carbon Negative

Opportunity Factors

OPPORTUNITIES	
Resource Efficiency	• Cost savings in electricity and carbon credits purchases due to transition to renewable energy
Energy Source	• Reduction in energy consumption costs due to improved energy efficiency
Products and Services	• Increase in users and securing industrial competitiveness due to the expansion of eco-friendly services
Markets	• Increase in investment in eco-friendly services due to growing needs for such services • Securing new markets and diversifying revenue sources through the transition to an eco-friendly portfolio
Resilience	• Ability to respond to various climate change risks due to diversification of resources[1)]

[1)] Resources: Energy sources, production and export items, research technologies, patents, etc.

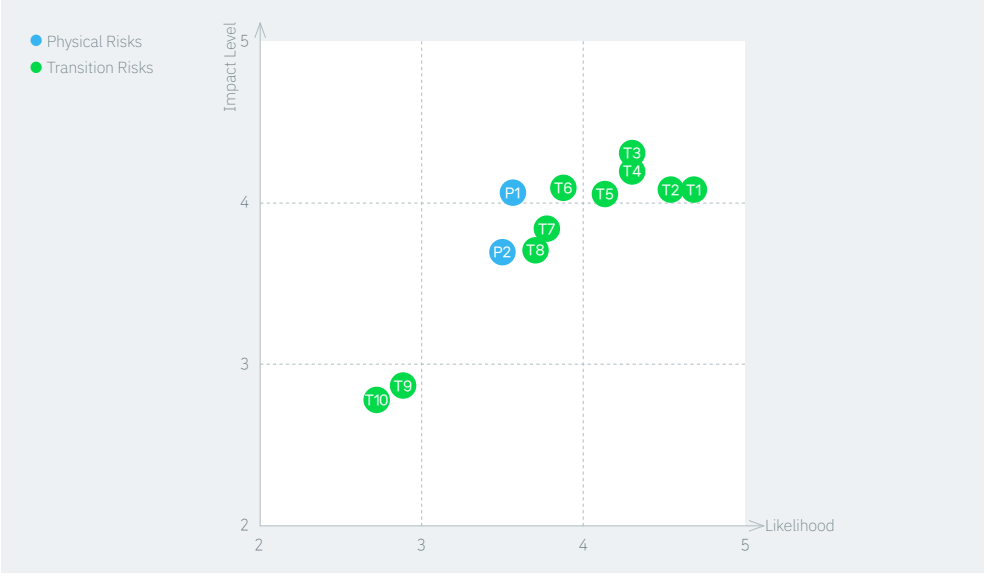
Identification of Climate Change-related Risk and Opportunity

Materiality Analysis

NAVER has conducted a materiality analysis of physical and transition risk and opportunity factors, categorizing them as short-term and mid-to-long-term. This analysis was performed through surveys of internal stakeholders, including executives and staffs. In materiality analysis, the likelihood is the degree to which the risk and opportunity factors are likely to affect NAVER's entire business. The level of impact measures the extent and significance of these effects on the business as a whole.

Results of Risk Assessment

A materiality analysis was conducted on physical risks that directly impact assets due to climate change and on transition risks arising from changes in policies and regulations. The assessment identified NAVER's most significant challenges as the increased costs of transitioning to renewable energy due to stricter carbon regulations and the heightened burden of purchasing carbon credits caused by rising greenhouse gas emissions. Although physical risks were deemed relatively less significant, they have the potential to impact the entire business, including the supply chain. Thus, physical risks are consistently monitored regardless of the outcomes of the materiality analysis.



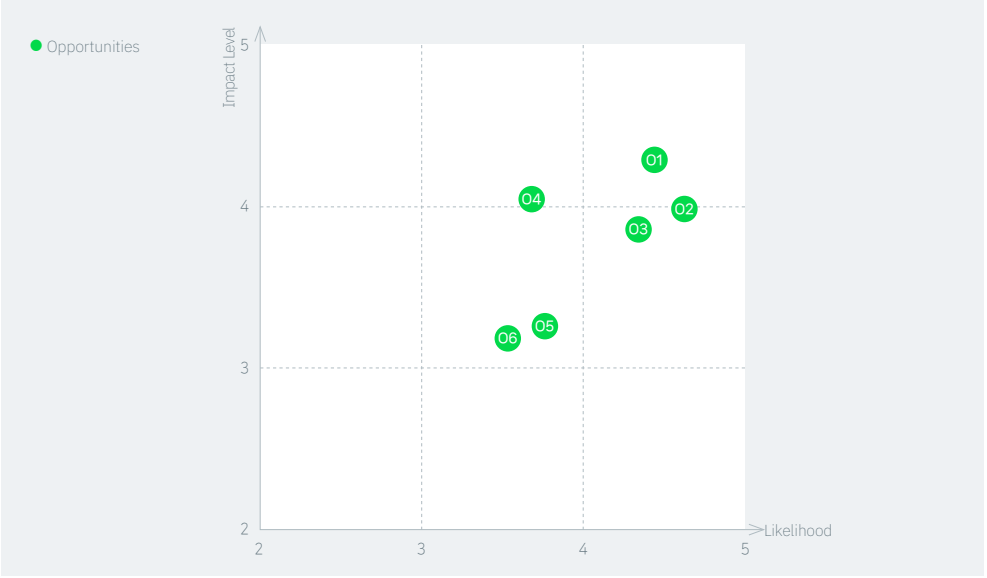
Classi-fication	No.	Risk	Short-term	Mid-term	Long-term	Rank
Physical Risks	P1	[Acute] Increase in damage to business due to extreme weather such as tropical cyclones and floodings	○	○	○	7
	P2	[Chronic] Increase in damage to business due to rising average temperatures and changes in weather patterns	○	○	○	10
Transtion Risks	T1	[New Policy] Increased costs for transitioning to renewable energy due to stricter carbon regulations	●	●	●	1
	T2	[Current Policy] Increased costs for purchasing carbon credits due to rising GHG emissions	◑	●	●	2
	T3	[Reputation] Negative reputation issues due to poor progress in achieving 2040 Carbon Negative during climate information disclosures	◑	◑	◑	3
	T4	[Market] Economic risks caused by unforeseen changes in international energy prices	●	◑	◑	4
	T5	[Technology] Increased costs for low-carbon, high-efficiency energy transitions due to growing demands for eco-friendly technology development	◑	◑	◑	5

Identification of Climate Change-related Risk and Opportunity

Classi-fication	No.	Risk	Short-term	Mid-term	Long-term	Rank
Transtion Risks	T6	[Reputation] Negative image, financial impact, and operational issues due to inadequate disclosure of climate information and ESG reporting	◑	◑	◑	6
	T7	[New Regulations] Decline in customer trust due to inadequate response to ESG evaluations that are not closely aligned with the business	○	○	○	8
	T8	[Market] Decrease in demand and competitiveness due to a lack of response to eco-friendly services resulting from changes in customer behavior	○	○	○	9
	T9	[Legal] Increase in climate litigation risks (fines, penalties) due to violations of environmental laws and greenwashing.	○	○	○	11
	T10	[Legal] Increase in climate-related legal risks due to poor supply chain management.	○	○	○	12

Results of Opportunity Assessment

The materiality analysis of business opportunities arising from climate change indicates that key opportunities for NAVER include the expansion of eco-friendly services, which leads to an increase in users and enhanced industrial competitiveness, as well as reduced energy consumption costs through improved energy efficiency.ess, as well as reduced energy consumption costs through improved energy efficiency.



Classi-fication	No.	Risk	Short-term	Mid-term	Long-term	Rank
Opportuni-ties	O1	[Products and Services] Increase in users and securing industrial competitiveness due to the expansion of eco-friendly services	●	●	●	1
	O2	[Energy Source] Reduction in energy consumption costs due to improved energy efficiency	●	●	◑	2
	O3	[Resource Efficiency] Cost savings in electricity and carbon credits purchases due to transition to renewable energy	◑	◑	◑	3
	O4	[Markets] Increase in investment in eco-friendly services due to growing needs for such services	◑	◑	●	4
	O5	[Markets] Secure new markets and diversify revenue sources by transitioning to an eco-friendly portfolio.	◑	◑	◑	5
	O6	[Resilience] Enhanced resilience through the diversification of resources* * Resources: Energy sources, production and export goods, research technologies, patents, etc.	◑	◑	◑	6

Climate Change Risk and Opportunity Impact Analysis

The TCFD recommendations require the measurement of risk and opportunity impacts based on climate change scenarios. In accordance with these guidelines, NAVER has utilized a tool to analyze climate change risks and opportunities, taking into account variability in policies and regulations, through scenario-based risk exposure assessments.

Physical Risks

Exposure Assessment and Analysis

NAVER has evaluated the exposure of its data centers and various sites (GAK Chuncheon, GAK Sejong, Connect One, 1784, Green Factory, NAVER Square Gwangju) to eight climate-related risk factors –heatwave, drought, wildfire, tropical cyclone, pluvial flooding, coastal flooding, fluvial flooding and water stress – under the RCP 8.5/SSP5-8.5 scenario. The assessment determined that pluvial floodings and heatwaves pose significant physical risks to NAVER's business sites.

High (RCP 8.5/SSP5-8.5)			
N/A	0%	Medium	3-7%
Low	0-1%	Medium-High	7-10%
Medium-Low	1-3%	High	10%-

(Unit: %)

Major Business Site	Location	Time of Occurrence	Acute				Chronic			
			Pluvial flooding	Coastal flooding	Tropical cyclone	Fluvial flooding	Temperature extremes	Drought	Wildfire	Water stress
GAK Chun-cheon	Chuncheon, South Korea	Short-term	0.30	0.00	0.00	0.00	3.50	0.00	0.00	0.00
		Mid-term	0.50	0.00	0.00	0.00	4.70	0.00	0.00	0.00
		Long-term	0.70	0.00	0.00	0.00	5.70	0.10	0.00	0.00
GAK Sejong	Sejong, South Korea	Short-term	0.30	0.00	0.00	0.00	3.40	0.00	0.00	0.00
		Mid-term	0.40	0.00	0.00	0.00	4.60	0.00	0.00	0.00
		Long-term	0.60	0.00	0.00	0.00	5.60	0.00	0.10	0.00
Connect One	Chuncheon, South Korea	Short-term	0.30	0.00	0.00	0.00	1.80	0.00	0.00	0.00
		Mid-term	0.50	0.00	0.00	0.00	2.40	0.00	0.00	0.00
		Long-term	0.60	0.00	0.00	0.00	2.90	0.00	0.10	0.00
1784	Seongnam, South Korea	Short-term	0.30	0.00	0.00	0.00	1.70	0.00	0.00	0.00
		Mid-term	0.40	0.00	0.00	0.00	2.30	0.00	0.00	0.00
		Long-term	0.60	0.00	0.00	0.00	2.90	0.00	0.00	0.00
Green Factory	Seongnam, South Korea	Short-term	0.30	0.00	0.00	0.00	1.70	0.00	0.00	0.00
		Mid-term	0.40	0.00	0.00	0.00	2.30	0.00	0.00	0.00
		Long-term	0.60	0.00	0.00	0.00	2.90	0.00	0.10	0.00
NAVER Square Gwangju	Gwangju, South Korea	Short-term	0.30	0.00	0.00	0.00	1.60	0.00	0.00	0.00
		Mid-term	0.40	0.00	0.00	0.00	2.20	0.00	0.00	0.00
		Long-term	0.50	0.00	0.10	0.00	2.70	0.00	0.00	0.00

Climate Change Risk and Opportunity Impact Analysis

[P1] Acute – Increase in damage to business due to extreme weather such as tropical cyclones and flooding

Time of Occurrence	Long-term
Likelihood[1)]	Exceptionally unlikely
Financial Impact[2)]	Low
Value Chain	All

[1)] Based on CDP
Virtually certain (99-100%), Very likely (90-99%), Likely (66-90%), More likely than not (50-66%), About as likely as not (33-50%), Unlikely (10~33%), Very likely (1-10%), Exceptionally unlikely (0-1%)

[2)] Internal standards based on short-term operating revenue in 2023
High (1.6%-), Medium-high (1.2-1.6%), Medium (0.8-1.2%), Medium-low (0.4-0.8%), Low (0-0.4%)

Background

Most scenarios forecast that ongoing greenhouse gas emissions from human activities will exacerbate global warming, reaching 1.5°C between 2021 and 2040. This warming is expected to significantly increase the frequency of extreme weather events like typhoons and heatwaves.

Potential Impact on NAVER

NAVER's facilities, including the "1784" office building and data centers such as GAK Sejong and GAK Chuncheon, are vulnerable to primary damages from extreme weather events, which may include asset loss, power supply instability, and potentially, human casualties. Additionally, recovery-related operational disruptions could result in further financial losses.

Key Assumptions for Financial Impact

Using the S&P Global Climanomics® climate modeling tool and based on the SSP scenarios adopted in the IPCC Sixth Assessment Report, that acute climate risks, such as pluvial flooding, coastal flooding, tropical cyclone, and fluvial flooding, could have on NAVER's business sites. Asset losses were calculated considering various factors such as asset value, revenue, location, and climate modeling indicators (precipitation, basin area), and loss factors.

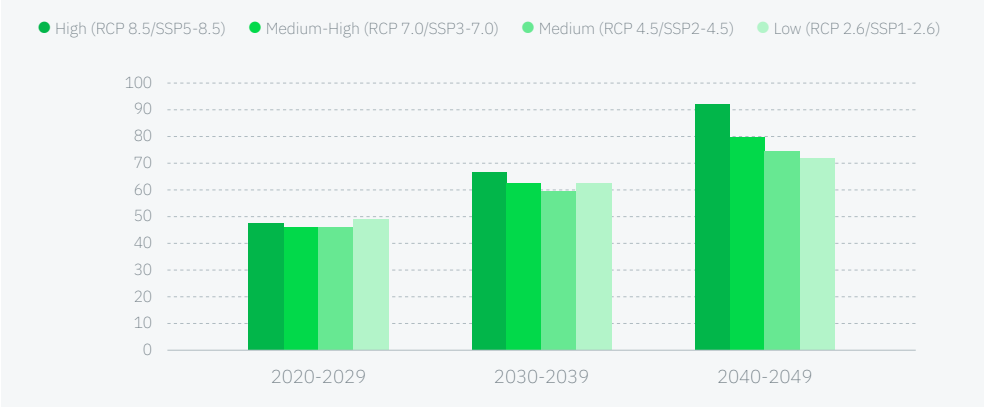
Projected Results of Potential Financial Impact

In the event of pluvial flooding, coastal flooding, tropical cyclone, and fluvial flooding of a certain scale occurring at NAVER's major business sites, the cumulative financial loss that could occur by 2050 is estimated to be up to approximately KRW 20.6 billion[3)] by 2050, or an average of KRW 0.7 billion per year, equating to about 0.01% of the 2023 operating revenue (short-term).

[3)] Based on High (RCP 8.5/SSP-8.5) Scenario

Climate Change Risk and Opportunity Impact Analysis

Financial Impact of Acute Physical Risks by Scenario (Unit: KRW 100 million)



Response Status and Plans

The locations of NAVER's data centers were selected as they have lower average annual temperatures compared to other regions and sites that minimize the impact of physical climate risks. Moreover, disaster response capabilities and emergency power systems were incorporated from the design stage.

Our data centers utilize natural outside air for cooling. If using natural air becomes challenging, chillers and night-time facilities (ice storage, water shrinkage) are employed to ensure uninterrupted service provision. Additionally, NAVER minimizes risks by implementing line duplication and multiplexing for power and telecommunications supplies, and ensures continuous service through uninterruptible power supply (UPS) and emergency generators. NAVER also has a business continuity plan (BCP)[1)] in place and conducts regular training to prepare for various types of emergencies.

Detailed Analysis of Financial Impact of Pluvial floodings

Pluvial floodings are identified as the most significant acute risk factors for NAVER's data centers and business sites. Therefore, a detailed analysis of the financial impact of pluvial flooding was conducted.

The likelihood of pluvial flooding affecting our data centers and business sites is very low in the short-term (about 0.3% possibility), mid-term (about 0.4-0.5%), and long-term (0.5-0.7%). The estimated maximum potential loss by 2050 is approximately KRW 19.8 billion. The highest risk location identified is GAK Chuncheon due to its locational proximity to the Chuncheon and Soyang Dams. Further physical condition assessments concluded that GAK Sejong's altitude is about 20-meter above the planned flood level of the Geum River, and GAK Chuncheon's location is about 94-meter above the planned flood level of the Soyang River, suggesting that there would be no direct impact from actual river overflows.

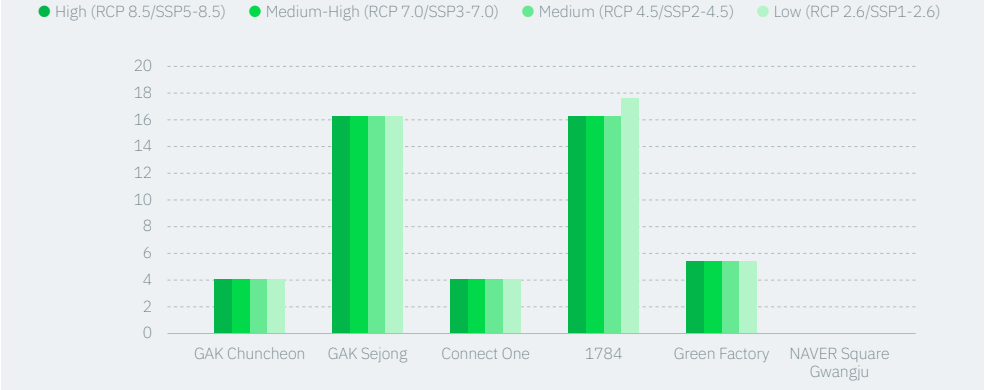
[1)] A plan designed to ensure that a company can continue operations in the event of disasters or unexpected emergencies

Climate Change Risk and Opportunity Impact Analysis

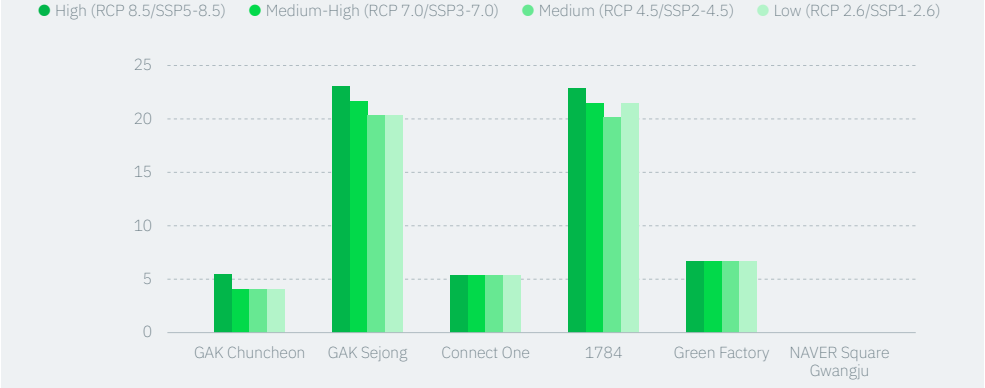
Financial Impact of Pluvial Flooding by Scenario

(Unit: KRW 100 million)

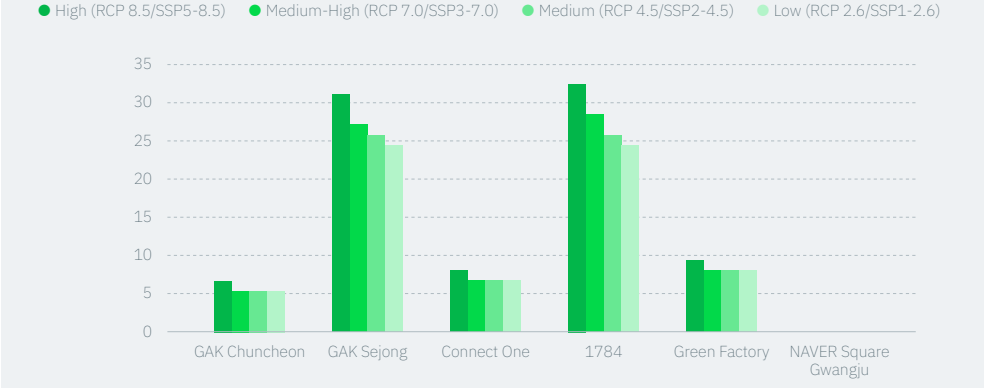
Financial Impact by Scenario (Short-term)



Financial Impact by Scenario (Mid-term)



Financial Impact by Scenario (Long-term)



Climate Change Risk and Opportunity Impact Analysis

[P2] Chronic – Increase in damage to business due to rising average temperatures and changes in weather patterns

Time of Occurrence	Long-term
Likelihood	Exceptionally unlikely
Financial Impact	Low
Value Chain	All

Background

According to the IPCC Sixth Assessment Report, global surface temperatures have increased more rapidly than during any other 50-year period over the last 2000 years, rising approximately 1.1°C compared to the 1900s.

Potential Impact on NAVER

Changes in weather patterns may decrease worker efficiency and productivity, whereas humid and hot air resulting from rise in average temperatures is unsuitable for cooling servers at NAVER data centers. This requires switching to internal circulation (internal cooling) as using outside air is impractical. With fewer days suitable for using outside air, the energy required for data center cooling increases, resulting in higher cooling costs and an increased power load on IT equipment.

Key Assumptions for Financial Impact

Using the S&P Global Climanomics® climate modeling tool, the financial impact of chronic climate risks, such as temperature extremes on NAVER's business sites, was assessed based on SSP scenarios. Asset losses were calculated considering various factors such as asset value, revenue, location, as well as climate modeling indicators (temperature, radiation, wind speed), and loss factors.

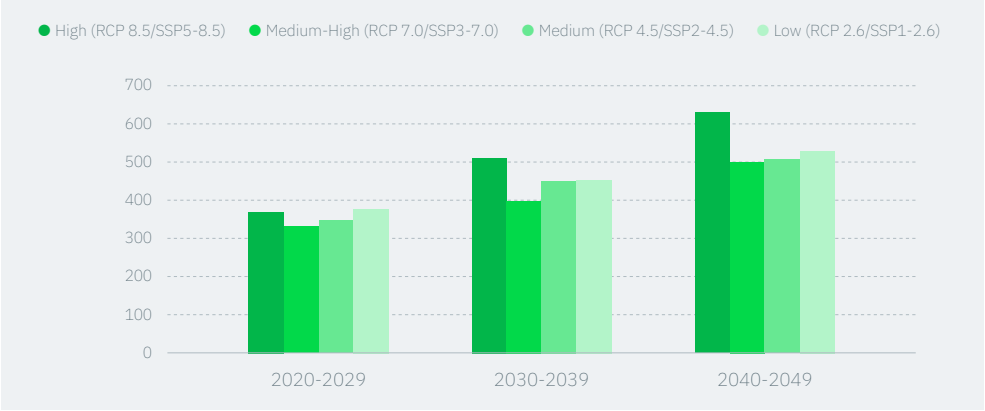
Projected Results of Potential Financial Impact

In the event of temperature extremes of a certain scale occurring at NAVER's major business sites, the cumulative financial loss that could occur by 2050 is estimated to be up to approximately KRW 151.5 billion[1)] by 2050, which is an average of KRW 5 billion per year, accounting for about 0.05% of the 2023 operating revenue (short-term).

[1)] Based on High (RCP 8.5/SSP-8.5) Scenario

Climate Change Risk and Opportunity Impact Analysis

Financial Impact of Chronic Physical Risks by Scenario (Unit: KRW 100 million)



Response Status and Plans

NAVER's data centers utilize the NAMU (NAVER Air Membrane Unit) natural cooling system, a proprietary technology of NAVER Cloud, to improve energy efficiency by employing heat exchange to utilize indirect outside air when outside temperatures are low. Specifically, the third generation of NAMU, implemented in GAK Sejong, incorporates over ten years of experience and expertise from GAK Chuncheon, enabling a hybrid system that selectively uses direct and indirect outside air depending on climatic conditions. This technology has significantly reduced the amount of energy required for cooling at the data centers. By strategically utilizing natural elements from the design stage, the data centers operate by maximizing the use of natural outside air and minimizing the environmental impacts of physical risks. Ongoing plans include further research and development, as well as investments aimed at continuously reducing energy consumption for cooling in data centers.

Detailed Financial Impact Analysis of Temperature Extremes

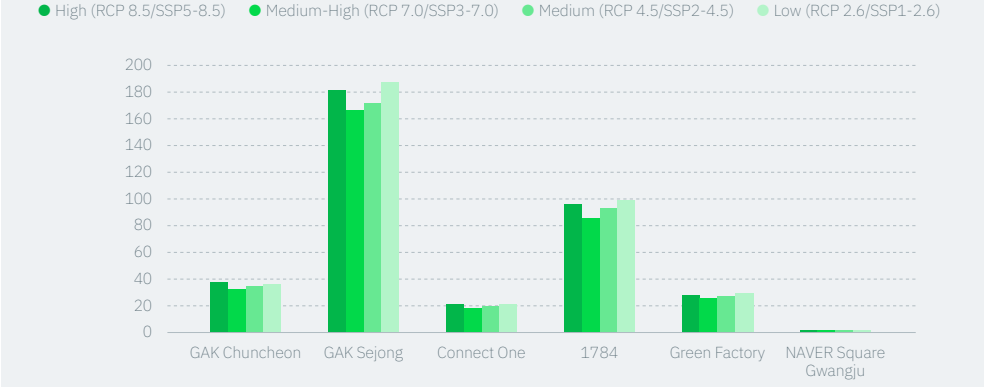
Temperature extremes have been identified as a significant chronic physical risk factor with a major impact potential on NAVER's data centers and business sites. The risk exposure assessment shows that the likelihood of occurrence of temperature extremes at all data centers and business sites is relatively high compared to flooding, an acute risk factor, as temperature extremes shows short-term probabilities between 2.2% to 2.5%, mid-term between 2.6% to 3.3%, and long-term between 3.2% to 4.0%. The estimated cumulative losses that could occur by 2050 are projected to be up to approximately KRW 148 billion, with GAK Chuncheon and GAK Sejong identified as the locations most affected.

Climate Change Risk and Opportunity Impact Analysis

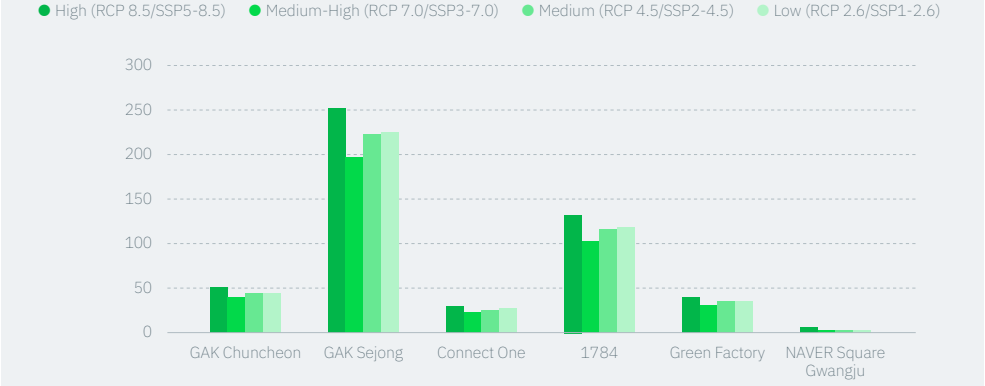
Financial Impact of Temperature Extremes by Scenario

(Unit: KRW 100 million)

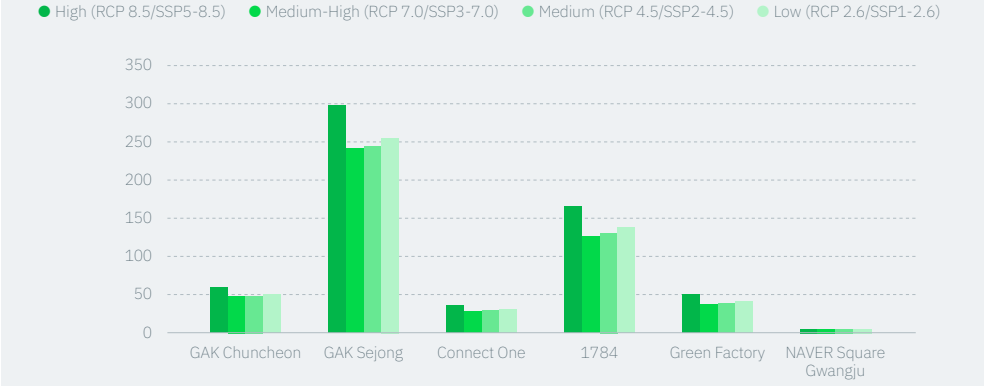
Financial Impact by Scenario (Short-term)



Financial Impact by Scenario (Mid-term)



Financial Impact by Scenario (Long-term)



Climate Change Risk and Opportunity Impact Analysis

Transition Risks

[T1] New Policy – Increased costs for transitioning to renewable energy due to stricter carbon regulations

Time of Occurrence	Mid-term, Long-term
Likelihood	Likely
Financial Impact	Low
Value Chain	Operation

Background

Globally, carbon regulations and mechanisms like the EU Carbon Border Adjustment Mechanism (CBAM) and the Clean Competition Act (CCA) are being intensified to cap global warming at 1.5°C or 2°C. The IPCC AR6 report highlights the critical need to transition to renewable energy as a response to these regulatory enhancements.

Potential Impact on NAVER

NAVER is enhancing its global competitiveness by expanding its business reach beyond South Korea into Japan, North America, Europe, and other regions, driven by innovative services and unique content. As a result, both the electricity consumption of servers and the costs associated with converting to renewable energy are projected to rise year over year. While NAVER is currently exempt from the EU CBAM regulations, the potential expansion of business sectors and the broadening scope of applicable industries suggest that these regulations could present both direct and indirect risks to NAVER.

Key Assumptions for Financial Impact

NAVER has established annual targets for the percentage of renewable energy transition necessary to achieve "2040 Carbon Negative," based on the annual Scope 1 and 2 emissions at its business sites. The financial impacts were assessed by considering the additional costs of PPA[1)] purchases required to meet the transition target percentages.

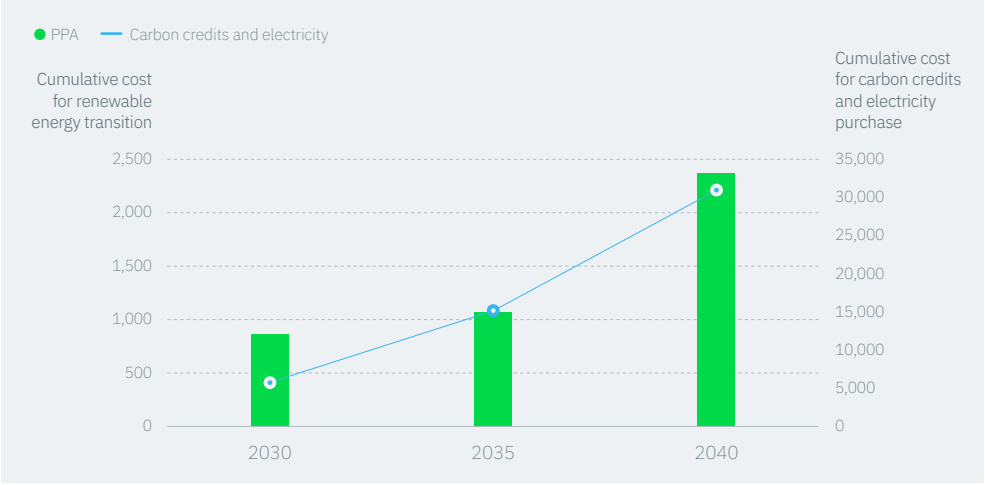
Projected Results of Potential Financial Impact

To meet the renewable energy transition target percentages, NAVER is expected to spend an average annual cost of approximately KRW 14 billion based on PPA, with a cumulative total by 2040 of KRW 237 billion. This conservative estimate of the financial impact, approximately 0.1% of the projected 2023 annual operating revenue, is relatively minor compared to potential financial implications of reputational damage from failing to achieve Carbon Negative, unexpected surges in international energy prices, and the opportunities presented by "green services."

[1)] Includes direct and third-party agreements, with prices calculated based on the rates for additional volumes over the amounts contracted in 2023

Climate Change Risk and Opportunity Impact Analysis

Estimated Cost for Transition to Renewable Energy (Unit: KRW 100 million)



Response Status and Plans

NAVER considers PPA a primary strategy for securing stable renewable energy supplies. It continuously monitors factors like PPA availability and pricing, conducts cost-benefit analyses to determine the optimal timing for adoption, and strives to minimize the costs associated with transitioning to renewable energy.

In 2023, NAVER purchased 2.4 GWh of electricity annually produced by Korea Water Resources Corporation's Yongdam II Hydroelectric Power (December) and ENlighten's solar power plant (January to November) through PPAs, which is used to power the "1784" office building. Additionally, NAVER is advancing its "Engagement for Renewable Energy Utilization" initiative, which aims to expand the supply of renewable energy and establish reasonable market prices. Simultaneously, it is building a diverse portfolio of renewable energy suppliers to consistently minimize the costs associated with the transition. Moving forward, NAVER plans to minimize the costs of transitioning to renewable energy and achieve "2040 Carbon Negative" by considering various procurement methods such as REC purchases and equity investments in addition to PPAs.

Climate Change Risk and Opportunity Impact Analysis

[T2] Current Policy – Increased costs for purchasing carbon carbon credits due to rising GHG emissions

Time of Occurrence	Long-term, Mid-term
Likelihood	Likely
Financial Impact	Low
Value Chain	Operation

Background

According to the 2023 Global Carbon Budget presented at the 28th UN Climate Change Conference (COP28), global GHG emissions in 2023 reached an unprecedented high of 36.8 billion tCO_2eq. Consequently, environmental regulations, including those enforced by the European Union, are intensifying, and international carbon prices, as outlined in IEA scenarios and the EU-ETS, are projected to increase over the long term.

Potential Impact on NAVER

As an entity subject to Korea's emissions trading scheme, NAVER may face costs associated with purchasing carbon credits if it exceeds its allocated quota. The proportion of paid allocations in Korea's GHG emissions trading scheme has steadily risen from 0% in the first phase (2015-2017) to 3% in the second phase (2018-2020), and to 10% in the third phase (2021-2025), with further increases anticipated in the fourth phase. Analysis of major carbon credit price scenarios indicates a continual rise in price.

Key Assumptions for Financial Impact

Financial impacts[1] on NAVER have been calculated by considering the expected annual Scope 1 and 2 emissions[2], both statutory and actual paid allocation ratios[3], and the projected annual domestic carbon credit prices[4] through 2040.

[1] Under the current policy, only the costs for carbon credit purchasing are considered, reflecting the increased purchasing burden due to rising GHG emissions. Electricity purchase costs are excluded.

[2] Considering the future growth of NAVER's business, additional allocations are applied to the projected annual Scope 1 and 2 GHG emissions up to the year 2040.

[3] The expected rate for paid allocations is based on the amendment to the "Act on the Allocation and Trading Of Greenhouse-gas Emission Permits," passed in the National Assembly in January 2024, which assumes an increment from 10% during the third planning period (2021-2025) to an increase of 20% every five years thereafter.

The actual rate of paid allocations is conservatively calculated to be within approximately 3% above the anticipated institutional rate.

[4] Based on the volume-weighted average price of KAU23 (10,764 KRW/tCO_2e), the annual prices are calculated up to 2040, incorporating price trends from IEA scenarios (NZE, APS, STEPS), NGFS scenarios (NDC, NZE 2050, Below 2°C), and the EU-ETS.
- STEPS(Stated Policies Scenario)
- APS(Announced Pledges Scenario)
- NZE(Net Zero Emissions by 2050 Scenario)
- NDC(Nationally Determined Contributions)

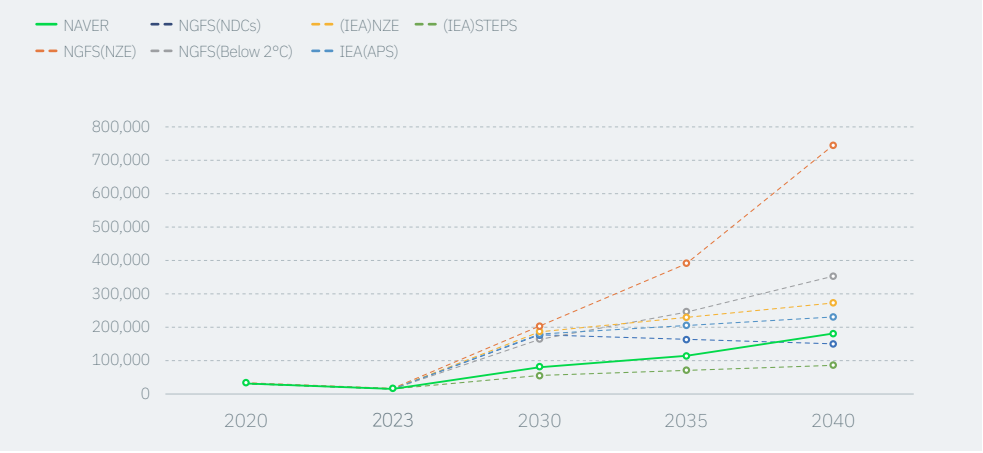
Climate Change Risk and Opportunity Impact Analysis

Projected Results of Potential Financial Impact

Considering the IEA and NGFS scenarios, the average price of carbon credits is forecasted to increase to KRW 185,702 by 2040. Without a transition to renewable energy, NAVER's expected costs for purchasing carbon credits are projected to amount to a cumulative total of approximately KRW 225.6 billion by 2040, with an average annual cost of around KRW 13.3 billion.

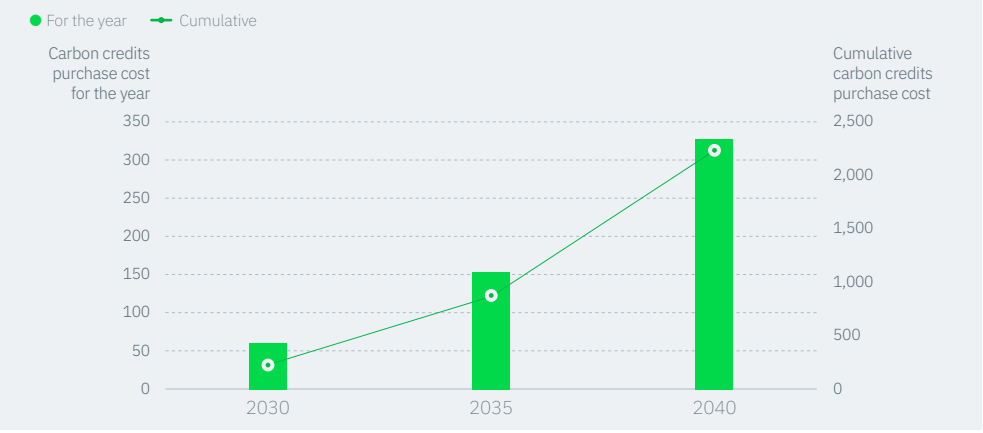
Carbon Credit Price by Scenario

(Unit: KRW/tCO_2)



Estimated Cost of Purchasing Emission Permits

(Unit: KRW 100 million)



Response Status and Plans

NAVER is continuously exploring the adoption of renewable energy as a strategy to minimize the costs associated with purchasing carbon credits. NAVER is working cooperatively with various sectors, such as public institutions like the Korea Water Resources Corporation and energy platforms like ENlighten. These partnerships demonstrate NAVER's aims to expand NAVER's renewable energy supply chain and enhance its access to diverse resources such as solar, wind, and hydropower by establishing relationships with renewable energy companies of all sizes. NAVER plans to monitor and assess the increases in carbon credit purchasing costs, general electricity rates, and the costs of transitioning to renewable energy consistently. In sum, NAVER expects to reduce its GHG emissions and minimize the associated transition costs by expanding renewable energy agreements.

Climate Change Risk and Opportunity Impact Analysis

[T3] Reputation – Negative reputation issues due to poor progress in achieving 2040 Carbon Negative during climate information disclosures

Time of Occurrence	Short-term, Mid-term, Long-term
Likelihood	More likely than not
Financial Impact	Low
Value Chain	All

Background

Since the adoption of the Paris Agreement, global efforts to reduce GHG emissions to combat global warming have intensified. Major countries, including the EU, U.S., and Canada, are accelerating their efforts to achieve carbon neutrality rapidly by upwardly revising their national greenhouse gas reduction targets for 2030. Similarly, on March 21, 2023, the South Korean government unveiled the "1st National Carbon Neutrality and Green Growth Basic Plan," aimed at realizing "2050 Carbon Neutrality and Green Growth." The plan sets the reduction of national GHG emissions by 40% compared to 2018 as its goal for 2030 (2030 NDC).

Potential Impact on NAVER

In 2021, NAVER proactively established a "2040 Carbon Negative" roadmap, which targets at a timepoint ten-year ahead of the national strategy to achieve carbon neutrality by 2050. The 2040 Carbon Negative strategy lays out a plan for a phased expansion in renewable energy adoption to achieve net zero greenhouse gas emissions by 2040. Should its progress lags behind the designated timeline in the strategy, NAVER risks losing trust from investors, consumers, and other stakeholders, which could result in decreased service usage rates.

Key Assumptions for Financial Impact

Due to the indirect relationship between the negative reputation caused by inadequate progress in climate response and the subsequent financial impact, accurately estimating the scale and likelihood of this risk and its financial repercussions is challenging. Consequently, NAVER has evaluated the potential financial impacts by reviewing the scope of related regulations and the fines/penalties in various countries.

Area	Related Regulations	Fines/Penalties
EU	Green Claims Directive	Impose strict regulations requiring environmental impact and performance to be proven from a lifecycle perspective based on scientific evidence, with fines up to 4% of annual turnover for violations.
California, United States	Voluntary Carbon Market Disclosure Act	Mandate that companies performing environmentally friendly marketing related to carbon neutrality or net-zero emissions must update relevant evidence at least once a year. A fine of USD 2,500 per day (approximately KRW 3.3 million) will be imposed for violations of the law, with a maximum total fine of USD 500,000 (approximately KRW 670 million)
UK	Digital Markets, Competition and Consumers Act	Impose fines of up to 10% of turnover for companies conducting eco-related advertising if the basis is not clear

Climate Change Risk and Opportunity Impact Analysis

Projected Results of Potential Financial Impact

Financial losses due to a negative reputation from poor progress in climate response are projected to impact up to 0.1% of NAVER's total sales. Based on NAVER's 2023 consolidated operating revenue of KRW 9,670,644 million, the estimated financial loss is approximately KRW 9.6 billion. Due to the indirect relationship between negative reputation from climate response and its financial impact, accurately estimating these figures is challenging, thus these estimates contain inherent uncertainties.

Response Status and Plans

To achieve its mid- to long-term greenhouse gas reduction target, "2040 Carbon Negative," Naver has become the first internet platform company globally to join both RE100 and EV100. It is pursuing the EV100 target by 2030 and the RE100 target by 2040." Detailed plans for implementation are being established, with continuous monitoring of risks and changes associated with domestic and international laws and policies to ensure the achievement of the ultimate goals.

Furthermore, NAVER has signed an "Agreement for Cooperation in Raising Public Awareness and Providing Information on Carbon Neutrality and Green Growth" with the Presidential Commission on Carbon Neutrality and Green Growth, Ministry of Environment, and Seoul National University. In partnership with such organizations as the Ministry of Environment, Korea Water Resources Corporation (K-water), CDP Korea, Samsung Electronics, SK Hynix, LG Electronics, and POSCO, NAVER is forging various forms of cooperation that can contribute to spreading environmental values. Major eco-friendly achievements are transparently communicated to NAVER's stakeholders through its annual publications of Integrated Report, TCFD report, and its company website.

Climate Change Risk and Opportunity Impact Analysis

[T4] Market – Economic risks caused by unforeseen changes in international energy prices

Time of Occurrence	Mid-term, Long-term
Likelihood	More likely than not
Financial Impact	Low
Value Chain	Operation

Background

International energy prices are rising, due to multiple factors such as the carbon-neutral megatrend, the COVID-19 pandemic, the Russia-Ukraine conflict, and inflation resulting from increases in the prices of energy raw materials. The IEA forecasts a 3.3% increase in global electricity demand in 2024 compared to 2023, as economic outlooks improve.

Potential Impact on NAVER

NAVER owns facilities such as the "1784" office building, data centers "GAK Sejong," "GAK Chuncheon," and others that use electricity as its main energy source. Therefore, unexpected fluctuations in energy prices can lead to significant economic risks for NAVER. It is crucial to implement response measures through scenario-based price fluctuation forecasts and minimize the resulting economic losses.

Key Assumptions for Financial Impact

Financial impacts arising from unexpected changes have been estimated by comparing the rate of increase in electricity prices according to internally-assumed scenarios[1)] and extreme scenarios[2)].

Projected Results of Potential Financial Impact

Based on the internally-assumed scenario, NAVER's expected average annual electricity purchase costs by 2040 are KRW 147.7 billion, while costs under the extreme NGFS Scenario Below 2°C are projected to average about KRW 171.6 billion annually. The additional cumulative cost of electricity purchases through 2040 is estimated to be approximately KRW 23.8 billion.

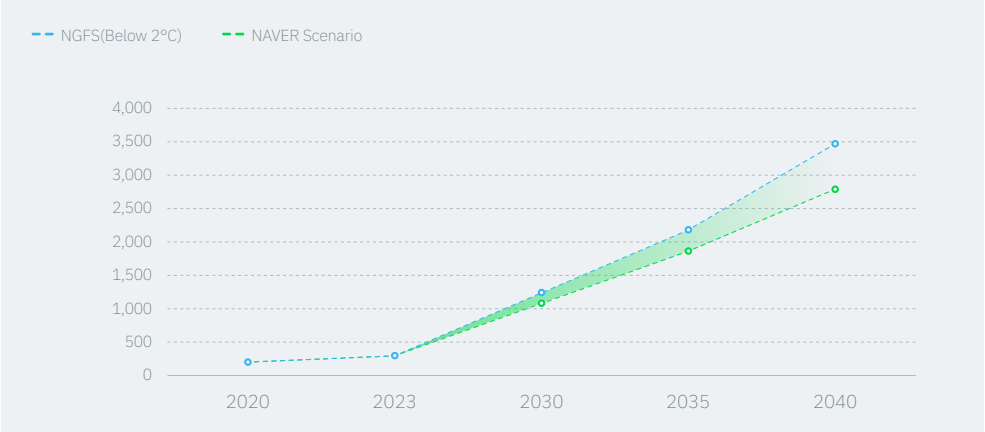
[1)] Applying a 2.48% increase in electricity rates based on KEPCO's unit prices from 2003 to 2022

[2)] Applying a 3.94% increase in electricity rates based on the NGFS Scenario Below 2°C

Climate Change Risk and Opportunity Impact Analysis

Electricity Price Increase Scenario

(Unit: KRW 100 million)



Response Status and Plans

NAVER developed price-prediction scenarios to manage fluctuations in energy prices and has been continuously monitoring both national energy crisis policies and international market trends to refine these scenarios. Building on this, NAVER will formulate and implement strategies to address potential fluctuations in energy prices. We will also expand initiatives aiming at improving energy efficiency to enhance the predictability of costs, either increased or mitigated through renewable energy PPAs that will contribute to minimize financial losses.

Climate Change Risk and Opportunity Impact Analysis

Opportunities

[01] Products and Services – Increase in users and securing competence with in the industry by the expansion of eco-friendly services

Time of Occurrence	Short-term, Mid-term, Long-term
Likelihood	More likely than not
Financial Impact	Low
Value Chain	All

Background

A series of research on consumer purchasing behavior for eco-friendly services indicate that over 66% of consumers are willing to pay more for sustainable goods and services, and many are reluctant to use services detrimental to the environment. The demand for eco-friendly services has increased progressively in Generation Z compared to Generation X.

Potential Impact on NAVER

By integrating eco-friendliness across all its services, including NAVER e-document Service, and pioneering eco-friendly initiatives in new business sectors, NAVER aims to not only broaden its domestic user base but also expand its global presence. Such initiatives are likely to enhance its global competitiveness and revenue growth.

Key Assumptions for Financial Impact

Given the indirectness of the relationship between the expansion of eco-friendly services, user growth, and enhanced industrial competitiveness, predicting the scale, likelihood, and financial impact of this opportunity accurately is challenging. Consequently, NAVER has estimated the financial impact based on total sales, taking into account its strategic direction to foster eco-friendly value across all its services, including existing ones.

Projected Results of Potential Financial Impact

The expansion of eco-friendly services, along with increases in users and enhanced industrial competitiveness, is projected to yield financial benefits amounting to up to 0.1% of NAVER's total sales. Based on NAVER's 2023 consolidated operating revenue of KRW 9,670,644 million, the estimated financial benefit is approximately KRW 9.6 billion. Due to the indirect relationship between eco-friendly services and financial impacts, precise calculations are not feasible, thus this estimate inherently includes uncertainties.

Response Status and Plans

NAVER is actively exploring ways to enhance the eco-friendliness of its diverse services to align with the preferences of consumers who favor eco-friendly options and is seeking new business opportunities to generate eco-friendly value. NAVER is identifying opportunities to improve within the commerce sector by promoting the sales of eco-friendly products, utilizing eco-friendly packaging, and implementing eco-friendly logistics for the products sold on its commerce platform. It is enhancing its eco-friendly services through strategic collaborations with partners of all sizes. NAVER will persist in delivering new value to users through its ongoing eco-innovation and is committed to developing a growth engine grounded in ESG principles.

Climate Change Risk and Opportunity Impact Analysis

[02] Energy Source – Reduction in energy consumption costs due to improved energy efficiency

Time of Occurrence	Short-term, Mid-term, Long-term
Likelihood	Likely
Financial Impact	Low
Value Chain	Operation

Background

NAVER's key clients consistently require enhancements in energy efficiency, particularly in electricity usage. The International Energy Agency (IEA) highlights that enhancing energy efficiency surpasses other resources in terms of economy, reliability, and as a solution to the climate crisis, thus positioning "improvement in energy efficiency" as the foremost priority in the energy transition agenda.

Potential Impact on NAVER

Efforts to improve energy efficiency not only leads to reduced electricity usage and carbon credit purchase costs due to lower GHG emissions but also mitigates various risks including potential increases in electricity rates, carbon credit prices, and energy supply instability. This could represent significant financial opportunities for NAVER in the mid- to long-term.

Key Assumptions for Financial Impact

The financial opportunity-related impact of reduced energy consumption costs deriving from energy efficiency improvements is calculated based on the amount of energy saved at NAVER's business sites, considering the costs for carbon credit purchasing[1)] and electricity rate[2)].

Projected Results of Potential Financial Impact

The annual reduction in GHG emissions from improved energy efficiency is estimated to be about 59,914 tCO_2 on average. This estimated reduction is expected to result in cumulative savings of approximately KRW 573.1 billion in carbon credit and electricity purchase costs by 2040, translating to an annual financial benefit of approximately KRW 33.7 billion.

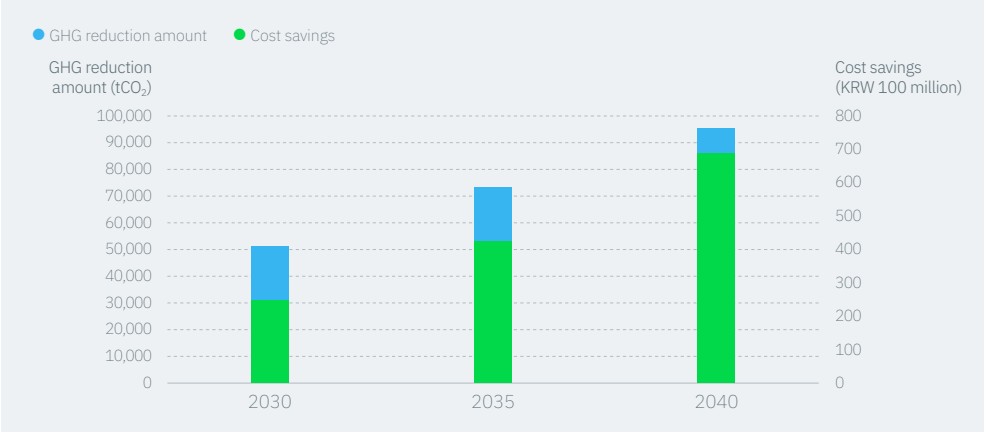
[1)] The costs for carbon credit purchasing are calculated based on the volume-weighted average price of KAU23 (10,764 KRW/tCO_2e), reflecting price trends up to 2040 from the IEA scenarios (NZE, APS, STEPS) and NGFS scenarios (NDCs, NZE 2050, Below 2°C), and EU-ETS.

[2)] The electricity rate is calculated by applying a 2.96% increase based on the NGFS (NDCs) scenario to NAVER's 2023 electricity purchase unit price.

Climate Change Risk and Opportunity Impact Analysis

GHG Reduction Effect

(Unit: tCO_2, KRW 100 million)



Response Status and Plans

NAVER is implementing a range of measures, including the use of geothermal systems, optimization of power operations, and the introduction of outside air-cooling systems at its facilities and data centers such as 1784, Green Factory, GAK Sejong, and GAK Chuncheon. Furthermore, in order to manage energy efficiency, NAVER continuously monitors the energy usage to analyze consumption patterns and operational conditions. Through such efforts, NAVER maintains its data centers' Power Usage Effectiveness (PUE)[1)] close to 1. We will continue to explore methods to further enhance energy efficiency and reduce power consumption.

[1)] Power Usage Effectiveness, the ratio of total amount of energy consumption of a data center facility to the energy consumed by IT equipment, it is generally used as a measure of the efficiency of data centers. An ideal PUE is 1.0.

Climate Change Risk and Opportunity Impact Analysis

[03] Resource Efficiency – Cost savings in electricity and carbon credits purchases due to transition to renewable energy

Time of Occurrence	Mid-term, Long-term
Likelihood	More likely than not
Financial Impact	Low
Value Chain	Operation

Background

Analyses of major carbon credit price scenarios project that both domestic and international carbon credit prices will continue to rise. The proportion of paid allocation in South Korea's GHG emission trading scheme during the third planning period (2021-2025) was increased to 10%, and it is expected to expand further during the fourth planning period.

Potential Impact on NAVER

Options for transitioning to renewable energy include green premiums, REC purchases, equity investments, self-generation, and both direct and third-party PPAs. By considering the price trends of these implementation measures along with carbon credit price scenarios, and aligning them with NAVER's current status and suitability, there could be significant reductions in carbon credit purchase costs and renewable energy transition costs, presenting a long-term financial opportunity for NAVER.

Key Assumptions for Financial Impact

The financial impact of cost savings from the renewable energy transition is calculated by comparing the operational costs, including carbon credits[1)] and electricity purchases[2)] that would occur without the transition, to the costs associated with adopting renewable energy[3)].

Projected Results of Potential Financial Impact

Based on scenario projections of future increases in carbon credit and electricity prices, the transition to renewable energy is expected to yield substantial cost savings in the long term. By 2040, it is anticipated that there could be cumulative savings of approximately KRW 487 billion, which translates to an average annual savings of about KRW 28.6 billion.

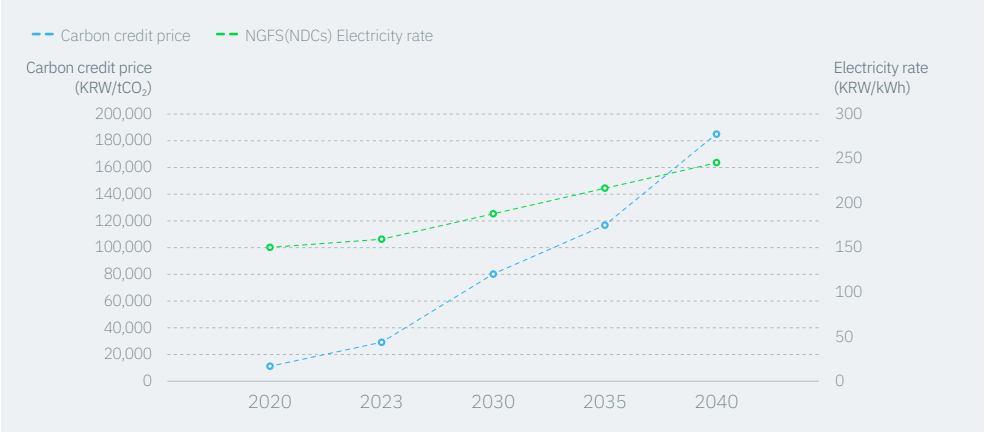
[1)] The annual prices up to the year 2040 are calculated based on the volume-weighted average price of KAU23 (10,764 KRW/tCO_2e), incorporating the price trends from IEA scenarios (NZE, APS, STEPS) and NGFS scenarios (NDCs, NZE 2050, Below 2°C), along with EU-ETS.

[2)] The electricity purchase price for NAVER in 2023 is calculated by applying a 2.96% increase in the electricity rate according to the NGFS (NDCs) scenario.

[3)] The cost of purchasing the amount of renewable energy used

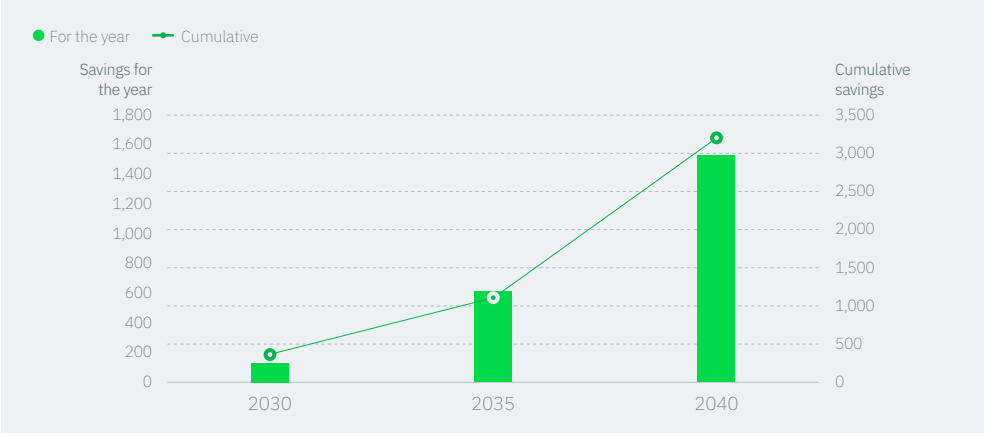
Climate Change Risk and Opportunity Impact Analysis

Estimated Price of Carbon Credit and Electricity Rate by Scenario



Estimated Cost Savings from Transitioning to Renewable Energy

(Unit: KRW 100 million)



Response Status and Plans

NAVER continuously monitors both domestic and international regulations and systems affecting carbon credit prices, analyzing trends through the lens of key NGFS scenarios. Leveraging this analysis, we perform economic evaluations comparing the costs of purchasing carbon credits with those of transitioning to renewable energy, aiming to minimize the financial burden associated with carbon credit expenditures.

RISK MANAGEMENT

Climate Change Risk Management Framework

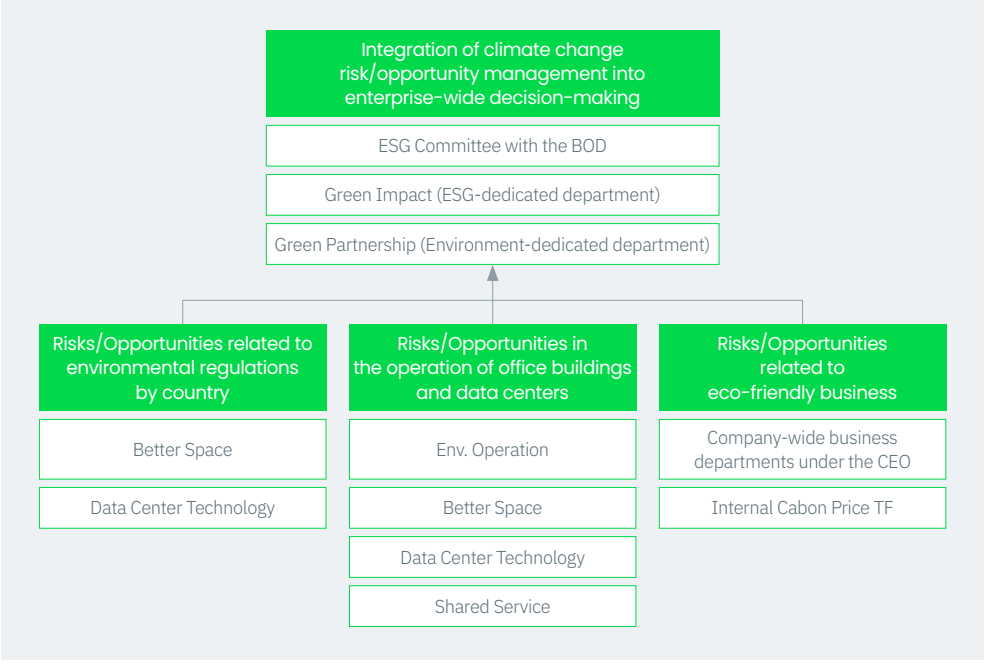
Risk/Opportunity Identification

NAVER continuously monitors climate-related policies, regulations, and requirements from major rating agencies to assess their applicability to the company. Additionally, NAVER conducts an annual materiality analysis involving employees and stakeholders to identify and evaluate major risks and opportunities that climate change could pose on its business, and develops response measures for key issues. The results are disclosed in the TCFD report.

Risk Management System

NAVER regularly assesses climate change risks and opportunities that could affect its business, incorporating them into a comprehensive corporate risk management process aligned with the overall business strategy.

Our office buildings and data centers are managed by relevant departments that continually assess and manage operational environmental risks and opportunities. We also implement green procurement strategies for the construction and operation of eco-friendly facilities. Moreover, company-wide climate change risks are systematically reviewed and identified by ESG management units under the guidance of the External/ESG Policy Representative, along with external consultations on the development of short-, mid-, and long-term strategic responses. The External/ESG Policy Representative evaluates mid-to-long-term investments and funding for risk mitigation, while the ESG Committee within the BOD makes final decisions on the direction and allocation of resources for non-financial risk management. Additionally, should severe disasters related to climate change occur, the Risk Management Committee under the BOD and the overall corporate risk management department oversee business continuity planning.



Climate Change Risk Management Framework

CASE STORY

Engagement for Creating a Renewable Energy-Friendly Environment

In 2023, NAVER strengthened its partnerships and engagements with internal and external stakeholders for better alignment with the Paris Agreement's goals and mitigate climate change risks. Moreover, we have engaged in policy consultations with legislatures, governments, public institutions, and civic organizations, using the knowledge and experiences gained from our PPAs. These activities aim to foster a renewable energy-friendly environment by facilitating enhancements in policies and systems for renewable energy use. Specifically, our engagements are divided into two categories: "policy-related" and "market-related". "Policy-related" engagements involve collaboration on institutional requirements with agencies such as the Ministry of Environment, Ministry of Trade, Industry and Energy, Korea Energy Agency, Korea Power Exchange, and Korea Electric Power Corporation. "Market-related" engagements focus on partnerships with public and private enterprises to broaden the renewable energy supply and utilization portfolio.

At the 8th Climate Action Roundtable, NAVER shared cases of renewable energy procurement and explained the pricing structure of renewable energy PPA, thereby enhancing the understanding of other RE100 companies and helping to resolve their difficulties. We also have secured access to a new renewable energy supply chain through a small hydropower contract with the Korea Water Resources Corporation. Following extensive collaboration with the Ministry of Environment, Ministry of Trade, Industry and Energy, Ministry of Economy and Finance, Korea Energy Agency, Korea Electric Power Corporation, Power Exchange, and Korea Water Resources Corporation aimed at systematic enhancements, significant improvements were made to the certification issuance criteria for direct PPA renewable energy usage and the direct PPA billing system, including amendments to the Enforcement Decree of the Value-Added Tax Act and billing standardization. This collaboration also facilitated the establishment of communication channels with relevant agencies.

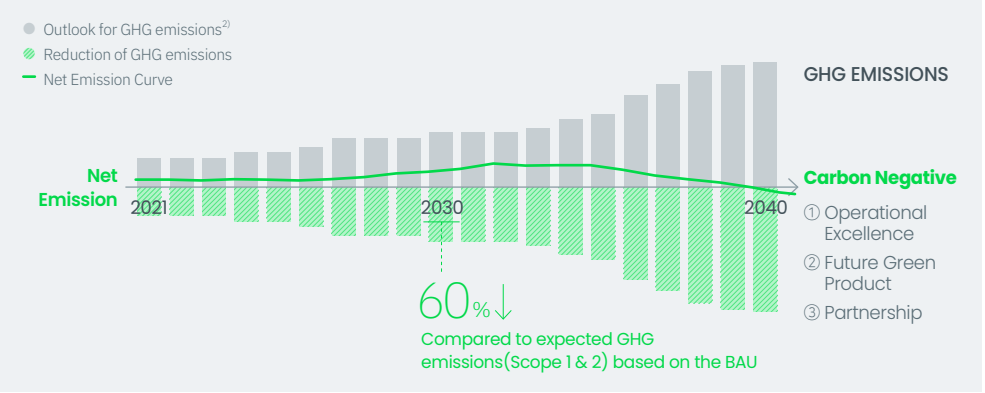
Participated as a speaker in the 8th Climate Action Roundtable

METRICS & TARGETS

2040 Carbon Negative

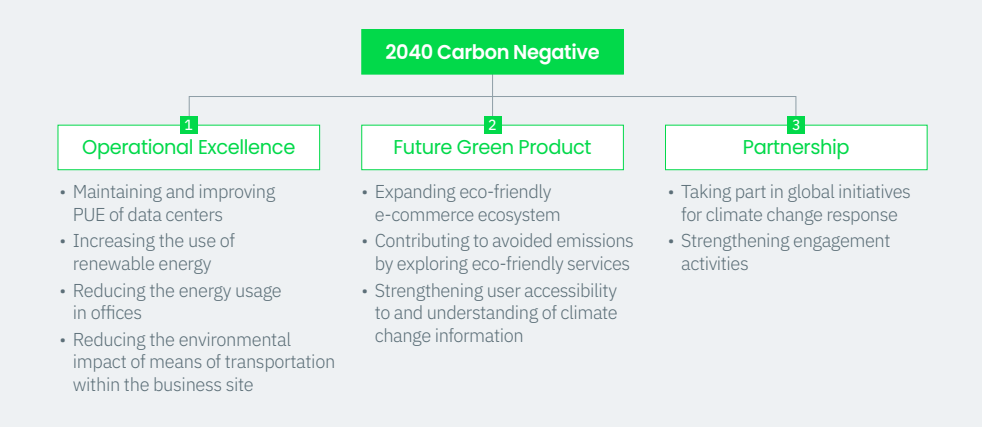
Approximately 97% of NAVER's GHG emissions in 2023 was from electricity use in its data centers and office buildings. As NAVER's business continues to grow, both GHG emissions and the proportion of emissions[1] from electricity use are expected to increase in the coming years. This situation presents significant risk for climate change mitigation but can also serve as an opportunity to demonstrate our sustainable business initiatives, emphasizing the importance of the environment. We therefore established the "2040 Carbon Negative" strategy in 2020 aimed at maximizing the environmental benefits of its business activities while minimizing adverse impact on the environment.

Roadmap



Implementation Strategy

Strategy involves achieving negative net emissions by offsetting more than the total amount of greenhouse gas emissions. NAVER has outlined three specific strategic directions to accomplish this: (1) aiming for operational excellence to reduce our environmental impacts, (2) pursuing avoided emissions by discovering eco-friendly services, (3) actively participating in the transition to a low-carbon economy by expanding external partnerships. These efforts include expanding the eco-friendly ecosystem through collaborations with various partners on the NAVER platform.



[1] Location-based method

[2] Future emission projection based on the assumption that current emission level continues

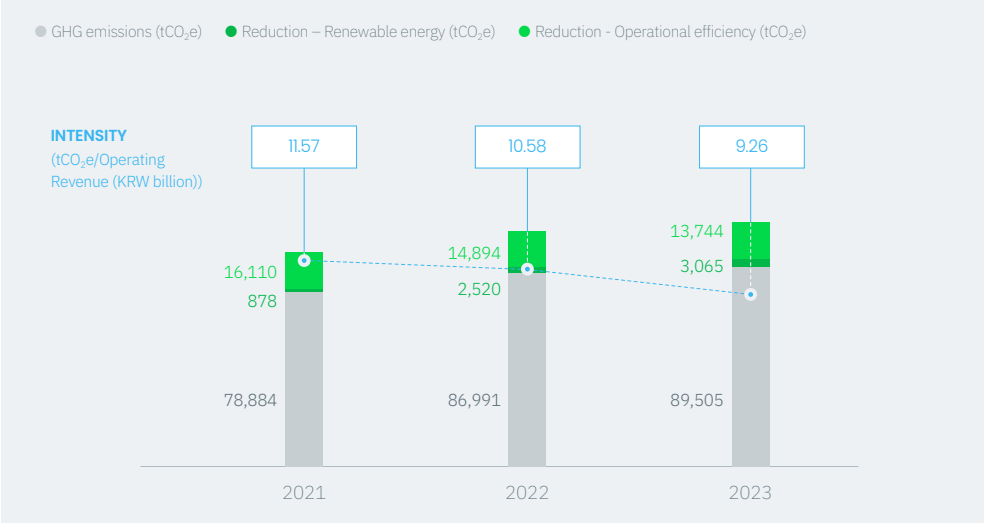
2040
Carbon Negative

Mitigating Environmental Impact from Business Operations

NAVER is dedicated to reducing adverse environmental impacts deriving from the operation of its office buildings and data centers. All NAVER's facilities were designed from the planning phase to reduce energy consumption and greenhouse gas emissions. As a result, all of NAVER's directly managed office buildings and data centers have attained the highest grade "Platinum" under the international LEED (Leadership in Energy and Environmental Design) certification. GAK Sejong, our data center completed in 2023, was built considering sustainability from the beginning. It utilizes natural wind to cool overheated server rooms and recycles various forms of energy. It is on track to achieve the LEED Platinum rating, the highest level attainable.

In 2023, NAVER reduced 16,809 tons of GHG, with 7,342 tons attributed to the use of natural wind cooling in data centers. NAVER's unique outdoor air-cooling system, NAMU, has been continuously developed. The third generation of NAMU, applied to GAK Sejong, utilizes a hybrid cooling system to enhance energy efficiency, continuously reducing greenhouse gases. The reduction in greenhouse gases through the use of renewable energy totaled 3,065 tons, marking an increase of 22% compared to the previous year. This achievement is not only due to the PPAs signed with Korea Water Resources Corporation and ENlighten but also because of the operation of a comprehensive mix of renewable energy sources, including solar and geothermal energy facilities installed in office buildings and data centers.

In 2023, NAVER's GHG emissions (89,505 tons) increased only slightly, by less than 3% compared to the previous year. However, its emission intensity continues to decrease, showing a 13% reduction year-on-year. On the other hand, with the full operation of the GAK Sejong in 2024 expected, a significant increase in greenhouse gas emissions is anticipated. Considering this aspect, NAVER plans to intensify efforts to secure renewable energy and contribute to avoided emissions.



2040
Carbon Negative

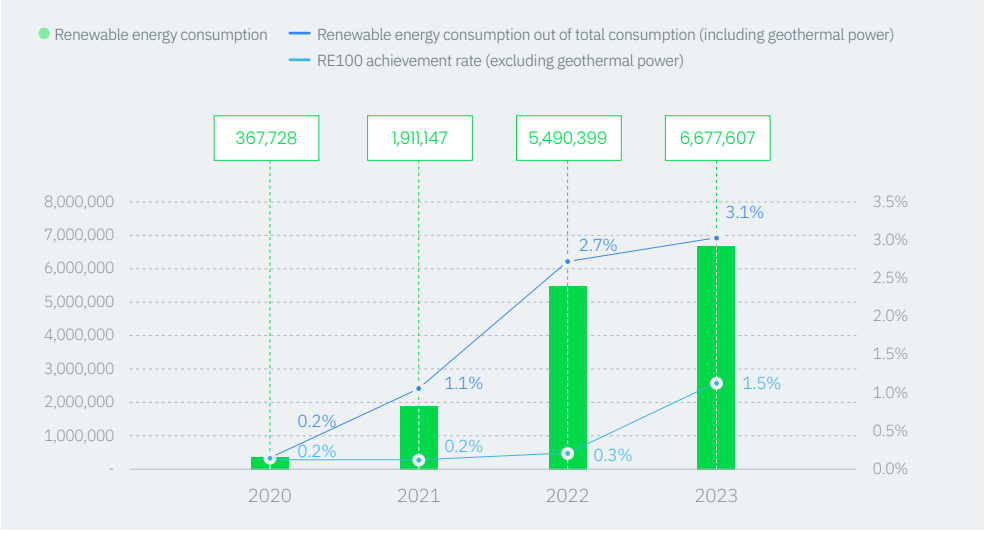
Expansion of Renewable Energy Transition

In October 2023, NAVER signed a direct PPA with Korea Water Resources Corporation to receive renewable energy from Yongdam No. 2 Hydroelectric Power Plant for NAVER 1784 (NAVER's second office building). Starting from December 1, 2023, this contract has enabled 1784 to source over 60% of its annual electricity consumption from renewable sources. This agreement has made 1784 the first building in Korea to utilize diverse renewable energies such as hydro, solar, and geothermal. Additionally, this PPA initiates ongoing cooperative projects under the "Joint Development Agreement to Implement RE100 and Increase ESG Value" signed with Korea Water Resources Corporation in December 2022.

In October 2022, NAVER signed a PPA with ENlighten and started using solar energy in December of the same year. Through a contract modification in October 2023, which transferred the solar energy supply to Green Factory (the first NAVER office building), the use of solar power resumed in January 2024. This arrangement now covers 15% of the annual electricity usage of Green Factory.

Moreover, NAVER is actively pursuing additional installations of solar facilities. A new solar facility installation completed in February 2024 at Connect One – a space designed to enhance employee engagement and teamwork – is expected to reduce an additional 30,000 $kgCO_2e$ of greenhouse gases annually.

(Unit: kWh, %)



2040
Carbon Negative

Transition to Electric Vehicle and Expansion of Charging Infrastructure

As a supporter for RE100 and EV100 initiatives, NAVER has been progressively transitioning its company-owned vehicles to electric vehicles (EV) since 2021 to mitigate Scope 1 GHG emissions. As of 2023, an 18% conversion rate has been achieved, with a goal to complete 100% EV transition by 2030. Where an immediate switch to EV is impractical, transitioning to "environmentally-friendly motor vehicles" as defined by the Act on Promotion of Development and Distribution of Environment-friendly Motor Vehicles and related regulations is prioritized. Furthermore, NAVER has equipped all its directly managed facilities with electric vehicle charging infrastructure. Currently, 116 chargers have been installed, making up 4.4% of all parking spaces. In 2023, the amount of greenhouse gas emissions reduced through the EV transition is estimated to be 13.3 tCO_2e.

Expansion of Internal Carbon Pricing System

Since 2021, NAVER has been incorporating carbon pricing[1)] into key decision-making processes, such as renewable energy contracts and investments in decarbonization facilities. This approach has enabled ongoing investments in decarbonization, including renewable energy PPA contracts, installation of additional self-solar facilities at sites, and the transition to electric vehicles.

In June 2024, NAVER expanded its efforts to include Scope 3 GHG emissions by implementing an internal carbon pricing system for the office equipment purchased by individual employees. The carbon emissions for the internal carbon pricing of office equipment are based on the manufacturer's product environmental report (LCA, carbon footprint report) and official data from the Korea Energy Agency's Efficiency Management Equipment System, using the potential price per ton of carbon based on the previous year's average price of carbon credit trading. Such effort is expected to encourage manufacturers to improve product energy efficiency and reduce emissions in the supply chain by disclosing the product environmental report. We also aim to enhance employee awareness of climate change and promote the exploration of low-carbon service opportunities. The efforts for applying internal carbon pricing are facilitated by the activities by the ICP Task Force and will be considered for further expansion.

[1)] The carbon price applied is assumed to increase linearly each year based on the average price of emissions trading in the previous year.

Metrics

Greenhouse Gas (GHG) Emissions – Scope 1&2

Category		Unit	2021	2022	2023[2]
Total GHG Emissions (Scope 1 & 2)[1]	Total	tCO_2e	78,884	86,991	89,505
Scope 1		tCO_2e	525	893	2,048
Scope 2 (market-based)			78,362	86,100	87,459
GHG Intensity	Total	tCO_2e/ Revenue (KRW billion)	11.57	10.58	9.26
Total direct intensity (Scope 1)		tCO_2e/ Revenue (KRW billion)	0.08	0.11	0.21
Total indirect intensity (Scope 2)			11.49	10.47	9.04

Greenhouse Gas (GHG) Emissions – Scope 3

Category		Unit	2021	2022	2023
Total		tCO_2e	215,556	209,708	78,706
Upstream	1. Purchased goods/services	tCO_2e	70,791	83,826	61,348
	2. Capital goods				
	3. Fuel- and energy-related activities		6,558	7,137	6,932
	4. Upstream transportation and distribution		0	10	76
	5. Waste generated in operations		132	249	259
	6. Business travel		51	453	1,032
	7. Employee commuting		1,589	2,035	2,288
	8. Upstream leased assets		42	40	0[2]
Downstream	9. Downstream transportation and distribution	tCO_2e	4	2	2
	11. Use of sold products		18,419	11,392	6,224
	12. End-of-life treatment of sold products		184	131	125
	13. Downstream leased assets		422	424	419
	15. Investments		117,364	104,009	0[3]

[1] GHG emissions are summed after truncating decimals at the business site level, so discrepancies may occur in category totals.

[2] Emissions of logistics warehouses, which were previously calculated under Category 8, are being calculated under "1. Purchased goods and services" with a category change.

[3] Emissions of subsidiaries, previously calculated separately, are being calculated as Scope 1 & 2 emissions of consolidated entities, being excluded from Category 15.

METRICS & TARGETS

Metrics

Energy Consumption

	Category		Unit	2021	2022	2023
Energy Consumption	Total		MWh	177,381	202,218	212,994
	Renewable energy	Geothermal energy	MWh	1,619	4,935	3,810
		Solar power		292	455	457
		Renewable energy PPA agreement		-	101	2,410
		Renewable energy consumption out of total consumption	%	1.1	2.7	3.1
		RE100 achievement rate		0.2	0.3	1.5
	Non-renewable energy (Direct)	LNG	MWh	2,163	3,665	4,953
		Mobile combustion		449	822	1,015
		Diesel		77	86	3,573
	Non-renewable energy (Indirect)	Electricity	MWh	169,705	185,596	191,214
		Steam		3,076	6,558	5,562
Energy Intensity	Total		MWh/ Revenue (KRW billion)	26.02	24.60	22.02
	Direct energy		MWh/ Revenue (KRW billion)	0.39	0.56	0.99
	Indirect energy			25.34	23.38	20.35
	Renewable energy			0.28	0.67	0.69

METRICS & TARGETS

Metrics

Environmental Activity Performance

	Category	Unit	2021	2022	2023
Green Purchase Rate	Based on number of orders	%	-	97	97
	Based on purchase amount		-	34	43
Electric Vehicle Transition	Electric vehicle transition rate	%	4	13	18
	GHG reduction from electric vehicle transition[1]	tCO_2e	-	6	13
Use of Reusable Cups	GHG reduction from waste reduction[2]	tCO_2e	-	8	21
EV Charging Facilities	Carbon reduction based on the charging amount of EV charging facilities at 1784	tCO_2e	-	65	110
NAVER e-document Service	Contribution to social GHG reduction[2]	tCO_2e	877	1,299	1,472
	Tree protection effect	Number of trees	9,989	14,804	16,776
	Water saving amount	L	37,181,126	55,104,669	62,446,195
Percentage of ISO 14001-certified Sites		%	100	100	100

[1] For newly introduced vehicles, reductions were calculated assuming a similar scale of gasoline vehicles.
[2] Methodology for calculating the GHG reduction effect from this environmental activity was verified by the Korean Standards Association.

Targets for Key Environmental Areas and Progress

	Category	Unit	2022	2023
GHG[3]	Target	tCO_2e/ Revenue (KRW billion)	10.49	10.49
	Performance of the year	tCO_2e/ Revenue (KRW billion)	10.58	9.26
	Achievement rate	%	99	113
Energy[4]	Target	MWh/ Revenue (KRW billion)	23.36	23.36
	Performance of the year	MWh/ Revenue (KRW billion)	24.93	21.33
	Achievement rate	%	98	110
Water[5]	Target	Ton/Revenue (KRW billion)	26.27	26.27
	Performance of the year	Ton/Revenue (KRW billion)	29.94	22.79
	Achievement rate	%	88	115
Waste[6]	Target	Ton/Revenue (KRW million)	47.16	47.16
	Performance of the year	Ton/Revenue (KRW million)	25.10	22.18
	Achievement rate	%	188	213

[3] Based on market-based total GHG emissions
[4] Based on total non-renewable energy consumption
[5] Based on total water withdrawal
[6] Based on the amount of waste incinerated and/or landfilled

APPENDIX

Third Party's Assurance Statement

NAVER Corporation Scope 1&2

Verification Scope

Korean Standards Association has conducted verification for GHG emissions based on GHG report provided by NAVER Corporation which includes Scope1 and Scope2 emissions.

Verification Standards and Guidelines

To conduct verification activities, verification team applied verification standards and guidelines. The standards and guidelines are as follows.

- Guidance for reporting and verification of GHG emissions trading scheme (No. 2023-221 provided by Ministry of Environment, Republic of Korea)
- Verification Guidelines for the Operation of the Greenhouse Gas Emission Trading System (No. 2021-112 provided by Ministry of Environment, Republic of Korea)
- For matters not specified in other guidelines, refer to 2006 IPCC Guidelines, KS I ISO 14064-1: 2018 and KS I ISO 14064-3: 2019

Level of Assurance

NAVER Corporation's GHG emissions satisfies the under Reasonable Assurance (less than ±5.0% of total emissions).

Verification Conclusion

As a result of verification activities, verification team has found no significant errors, omissions, and misstatements. Therefore, Korean Standards Association confirms that following emissions data are adequately quantified.

2023 Emissions (Scope1, Scope2)

(Unit : tCO_2eq)

No	Business Site	Location-based			Market-based		
		Scope 1	Scope 2	Total	Scope 1	Scope 2	Total
1	Data Center GAK Chuncheon	43.76	66,252.283	66,296	43.76	66,252.283	66,296
2	Green Factory	0	1,630.621	1,630	0	1,630.621	1,630
3	Connect One	595.002	1,026.528	1,621	595.002	1,026.528	1,621
4	Partner Square	48.144	536.71	584	48.144	536.71	584
5	Leased Offices	28.478	168.837	197	28.478	168.837	197
6	1784	385.303	8,657.486	9,042	385.303	7,550.184	7,935
7	Tech1 Tower	78.67	5,917.398	5,996	78.67	5,917.398	5,996
8	Data Center GAK Sejong	869.303	4,377.16	5,246	869.303	4,377.16	5,246
Total		2,048.66	88,567.023	90,612	2,048.66	87,459.721	89,505

※ Decimal place is not considered when calculating the emission of each workplace.

June 14, 2024

APPENDIX

Third Party's Assurance Statement

Scope 3 of NAVER Corporation

1. Verification Goal

The goals of greenhouse gas (GHG) emission verification (hereinafter referred to as 'verification') conducted by the Korean Standards Association are as follows.

- Confirming the conformity with standards and procedures of GHG emission and GHG emissions calculated within the scope of verification
- Checking the validity of declarations related to the organization's GHG emissions or removals
- Confirming the effective implementation of the organization's management of GHG emissions or removals
- Confirming the conformity of processes for implementing, managing and improving the organization's GHG emissions or removals estimates

2. Verification Scope

Korean Standards Association conducted limited guarantee level verification for NAVER Corp.'s Scope3 Greenhouse Gas declaration.

- Reporting Target: All workplaces that have the dominant influence of Naver Corporation
- Boundary: Scope3(Other indirect emissions)
  - Category 1~2. Purchased goods and services + Capital goods
  - Category 3. Fuel and energy-related activities (not included in Scope1 or Scope2)
  - Category 4. Upstream transportation and distribution
  - Category 5. Waste generated in operations
  - Category 6. Business travel
  - Category 7. Employee commuting
  - Category 9. Downstream transportation and distribution
  - Category 11. Use of sold products
  - Category 12. End-of-life treatment of sold product
  - Category 13. Downstream leased assets
- Year: January 1, 2023 to December 31, 2023

3. Verification Criteria and Guidelines

Korean Standards Association conducted verification according to international standards and the standards and guidelines of the National Institute of Environmental Research.

- KS I ISO 14064-1:2018, KS I ISO 14064-3:2019
- Corporate Value Chain (Scope3) Accounting and Reporting Standard (WRI)
- Technical Guidance for Calculating Scope 3 Emissions (WRI)
- Verification Guidelines for the Operation of the Greenhouse Gas Emissions Trading System (Recent Issue, Ministry of Environment)
- Guidelines for Reporting and Certification of Emissions from Greenhouse Gas Emissions Trading System (Recent Issue, Ministry of Environment)
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories

APPENDIX

4. Level of Assurance Verification and Responsibility

Korean Standards Association provides verification at limited level of assurance to strengthen GHG management for your company's GHG emissions.

- On-site inspection: Visit to NAVER Corporation Headquarters
- Method of confirmation:
  – Interview with greenhouse gas emissions manager and field staff
  – Review of the management system and data used to calculate greenhouse gas emissions during the reporting period
  – Tracking review of internal documents and basic data

NAVER Corp. should provide fair data on information and evidence related to GHG emissions, and the KSA is limited to guaranteeing GHG emissions.

5. Verification Limits

GHG emissions can be affected by factors such as data limits and uncertainties in the scope of verification, and inherent limitations may exist accordingly.

6. Verification Conclusion

No errors or false facts were found in NAVER Corp.'s GHG emissions verified through the ISO 14064-3 verification procedure within the scope of verification.

Appendix. Scope3 GHG Emission

(Unit : tCO_2eq)

Category		GHG emissions	Category		GHG emissions
Category 1	Purchased goods and services	61,348.457	Category 7	Employee commuting	2,288.193
Category 2	Capital goods		Category 9	Downstream transportation and distribution	2.250
Category 3	Fuel and energy-related activities (not included in Scope1 or Scope2)	6,932.099	Category 11	Use of sold products	6,223.792
Category 4	Upstream transportation and distribution	76.448	Category 12	End-of-life treatment of sold products	125.349
Category 5	Waste generated in operations	258.868	Category 13	Downstream leased assets	418.556
Category 6	Business travel	1,032.348	**Total**		**78,706**

※ Note: The final greenhouse gas emission was cut below the decimal point and expressed in integer units.

May 31, 2024

NAVER