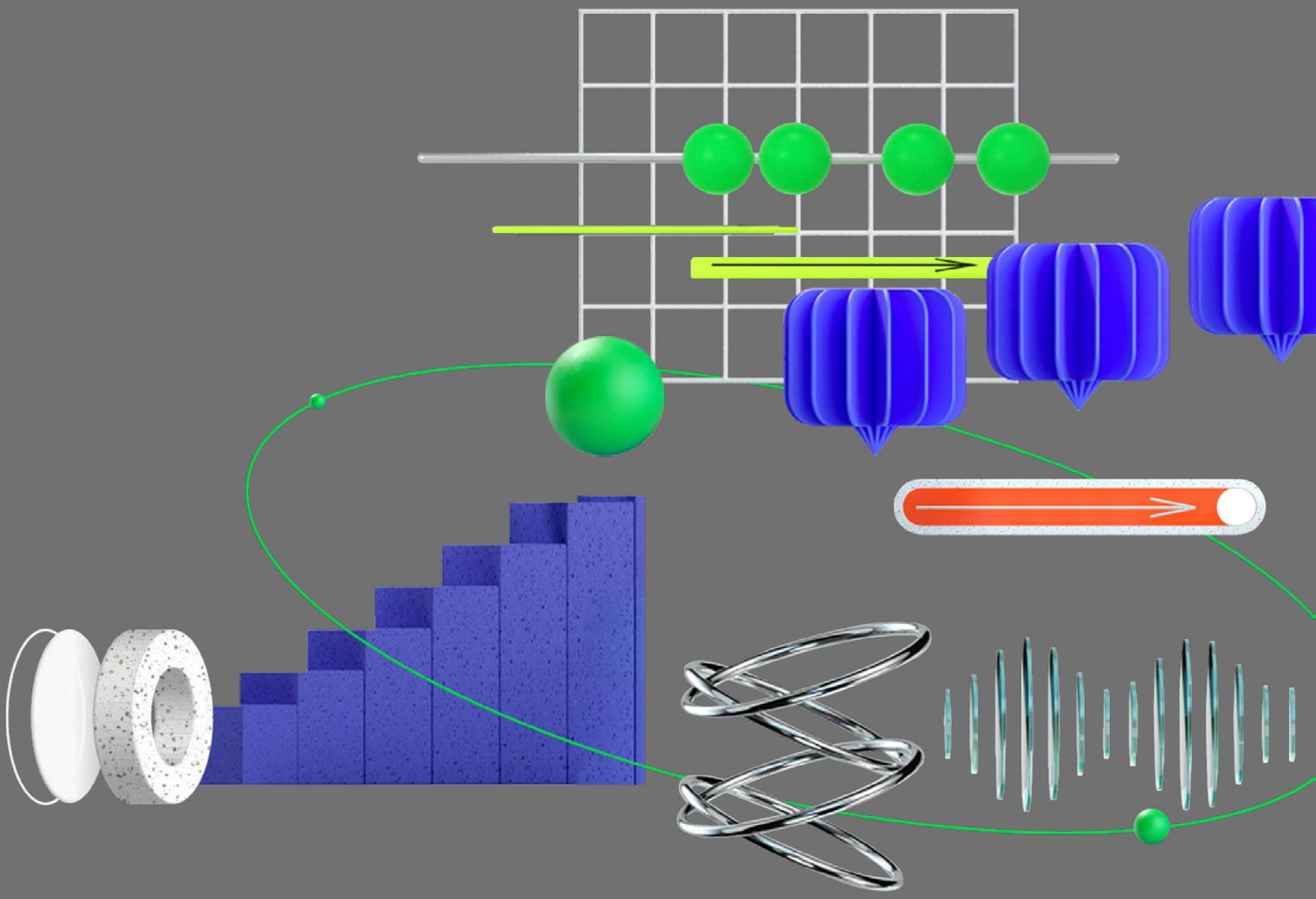
NAVER

TCFD REPORT:
TOWARDS 2040 CARBON NEGATIVE

2022



NAVER

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Our Climate Vision

The Intergovernmental Panel on Climate Change (IPCC) emphasized the urgency of climate action by stating that climate crisis is "unequivocally" caused by human activities in its sixth Assessment Report in 2021. At NAVER, we have established the "2040 Carbon Negative" strategy to adapt to and mitigate the climate crisis during this era. We aim to achieve zero carbon emissions by 2040 and have already begun implementing plans to reduce our carbon footprint.

To support the implementation of the 2040 Carbon Negative strategy, NAVER has established the Environmental team and obtained ISO 14001 certification to develop an effective environmental management system. Our company has also joined global initiatives such as RE100 and EV100 to demonstrate our commitment to achieving Carbon Negative. In addition, we have been active in pursuing initiatives such as promoting PPAs for renewable energy, improving energy efficiency in data centers, and making substantial efforts to reduce energy consumption.

In addition, NAVER does its utmost to explore ways to contribute to the overall social transition toward environmental sustainability as a platform company. We actively engage with our users to find the path toward achieving the goal of 2040 Carbon Negative. NAVER recognizes the importance of ESG values not only from an ESG perspective but also from a business perspective. Across all of our services, we plan to seek ways to enhance environmental friendliness, creating new business opportunities that generate environmental value. By promoting eco-innovation, we aim to provide users with ESG value and contribute to the overall transition to carbon neutrality in society, and we will continue make multi-faceted efforts to establish ESG-based growth engines.

Our Governance

ESG Committee

In 2022, the ESG Committee consisted of 4 directors, including two outside directors (including the chairperson), one other non-executive director, and one inside director. As of 2023, it is composed of three directors according to a resolution made at the 4th regular BOD meeting in March 2023. Outside director Lee Keon-hyeok, with high expertise in governance and communication, was appointed as the new chairman. Chae Seon-ju, head of External/ESG Policy, and Roh Hyeok-joon, who have been part of the ESG Committee since 2022, continue to provide their expertise in managing risks and opportunities associated with corporate sustainability.

Composition of ESG Committee

Committee name	Composition	Members	Purpose of establishment and authorities
ESG Committee	2 Outside directors 1 Inside director	Lee Keon-hyok (Chair) Rho Hyeok-joon Chae Seon-ju	**Purpose of establishment** - Embed sustainability in corporate management and decision-making - Manage major ESG risks and opportunities **Authorities** - Engage in top decision-making on corporate-wide ESG matters - Discover environmental/social business items centered around sustainability and make decisions on relevant investments - Establish strategies and directions for climate response, ESG disclosure. and external communication - Execute social contributions, etc.

* As of March 2023

The ESG Committee convenes on a quarterly basis, and among its agenda items, environmental matters are reported regularly at least twice a year. In 2022, the ESG Committee was held five times, among which at four committee meetings, members received reports on the implementation status based on NAVER's 7 ESG management strategies, exchanged opinions on sustainability management global benchmarks, and discussed future plans based on NAVER's current status and global trends. In the environmental domain, in particular, the ESG Committee has made significant decisions such as entering into 1784 PPA renewable energy contracts and joining environmental initiatives. These actions have laid the foundation for the practical implementation of the "2040 Carbon Negative" goal and the adoption of global-level environmental management practices.

Reporting Agenda of the ESG Committee in 2022

Classification	Major reported items in 2022	Date of reporting				
		1st (Mar.)	2nd (Aug.)	3rd (Oct.)	4th (Dec.)	5th (Dec.)
Report on the status and outcome of ESG implementation strategies	NAVER's ongoing efforts to enhance our ESG strategy and our implementation overview	●	●	●		●
	Progress in securing renewable energy for achieving the goal of 2040 Carbon Negative	●		●		
	Joining global environmental initiatives		●	●		
Monitoring of stakeholder requirements and internal and external communication	Signing of an MOU for the establishment of a recycled plastic ecosystem			●		
	Signing of an MOU for the restoration of the local community ecosystem				●	
	Signing of an MOU for the implementation of RE100 and the dissemination of its values				●	
Director attendance rate (%)		100	100	100	100	100

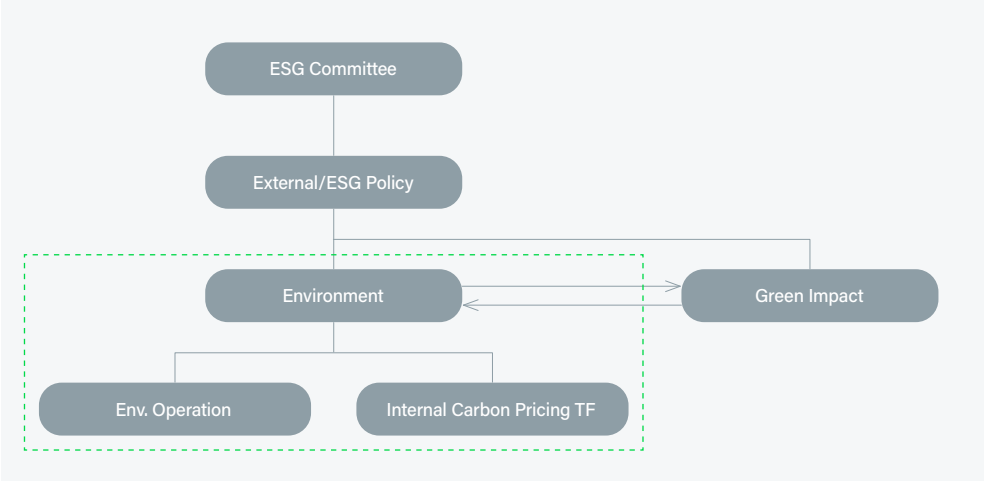
Top Executives' Responsibilities

In 2022, NAVER aims to enhance our approach to climate change response in a more systematic and professional manner, alongside the appointment of new top executives. The responsibility and authority for climate change strategy development, related investments, and overall capital allocation, previously held by the CFO, have been transferred to the Chief Sustainability Officer (CSO), who is in charge of external/ESG policies. As a registered executive of the ESG Committee, the CSO oversees NAVER's climate change response strategy and actively engages with internal and external stakeholders to communicate and drive the direction and implementation of NAVER's climate change initiatives. Furthermore, the CEO promotes the transition to a low-carbon economy and leads the exploration of environmentally friendly business opportunities within the organization.

Under the umbrella of NAVER's external/ESG policy organization, the Environment team is dedicated to ESG initiatives in the environmental field. It is responsible for reviewing the procurement of renewable energy to achieve the goal of 2040 Carbon Negative, establishing and pursuing environmental management systems and certifications to improve internal management capabilities, and providing environmental education for employees. These environmental improvement tasks are communicated to the dedicated ESG organization, Green Impact, where they undergo mutual inspection and discussion to ensure alignment with NAVER's 7 ESG management strategies.

In March 2023, the Environment organization established the Env. Operation team under its purview to efficiently carry out environmental management activities. Additionally, the Internal Carbon Pricing Task Force (TF) was established to measure and incentivize the reduction of carbon emissions resulting from employee activities through the implementation of an internal carbon pricing system. The Environment team, together with the Env. Operation team and Internal Carbon Pricing TF, aims to share NAVER's environmental direction with all employees, promote cross-functional collaboration, and achieve carbon emission reduction targets by encouraging collective efforts throughout the organization.

Organization Chart



Our Risk & Opportunity

Integrated Enterprise Risk/ Opportunity Management Process

Against the backdrop of major stakeholders' increasing demand for disclosure of the 2040 Carbon Negative implementation status, NAVER strived to analyze climate-related risks and opportunities in detail and systematically establish a response plan in 2021. Through the following steps, we periodically diagnose and review climate change risks/opportunities and integrate this process into NAVER's overall business planning as a companywide risk management process.

As part of NAVER's property, plant and equipment, its internal facilities, including head offices and data centers, are managed for operational environmental risks and opportunities within the organizational framework. This includes implementing green procurement practices for environmentally friendly facility construction and operations. Furthermore, the overall climate change risks for our company are reviewed and identified by the enterprise-wide ESG management team under the CSO, with input from external experts. The CSO reviews the need for medium- to long-term investment expenditures or resource acquisition for risk mitigation, and the ESG Committee within the Board of Directors ultimately makes decisions on key non-financial risk management directions and investments. In the event of severe disasters or emergencies resulting from climate change, the Risk Management Committee within the BOD and a dedicated support organization under the CEO manage business continuity.

Identification and Analysis of Climate Change Risks/ Opportunities

We have identified a variety of risks and opportunities that can impact NAVER by analyzing the demands of various stakeholders such as global regulations, industry status, media coverage, investor inquiries, and rating agencies, as well as the current state of NAVER. These findings have been used to create a pool of climate change risks and opportunities. We have conducted in-depth analyses of each risk and opportunity, considering their occurrence timing in the short, medium, and long term, as well as their potential impact across the entire value chain. The identified climate change risks and opportunities have been prioritized based on their financial and non-financial impact and likelihood. This process involves gathering input from relevant departments and experts to ensure a comprehensive risk assessment from different perspectives.

Types of Risks from Climate Change

Classification	Description	The climate change scenarios applied during the risk/ opportunity analysis
Transition Risks	The impact of policy/regulatory changes, technological advancements, market shifts, and reputational influences arising from the transition to a low-carbon economy	IEA CPS, IEA B2DS IEA NZE 2050 and National NDC
Physical Risks	Acute and chronic risks to business infrastructure resulting from climate change-induced extreme weather events and intensified weather variability	RCP 8.5, RCP 4.5, RCP 2.6

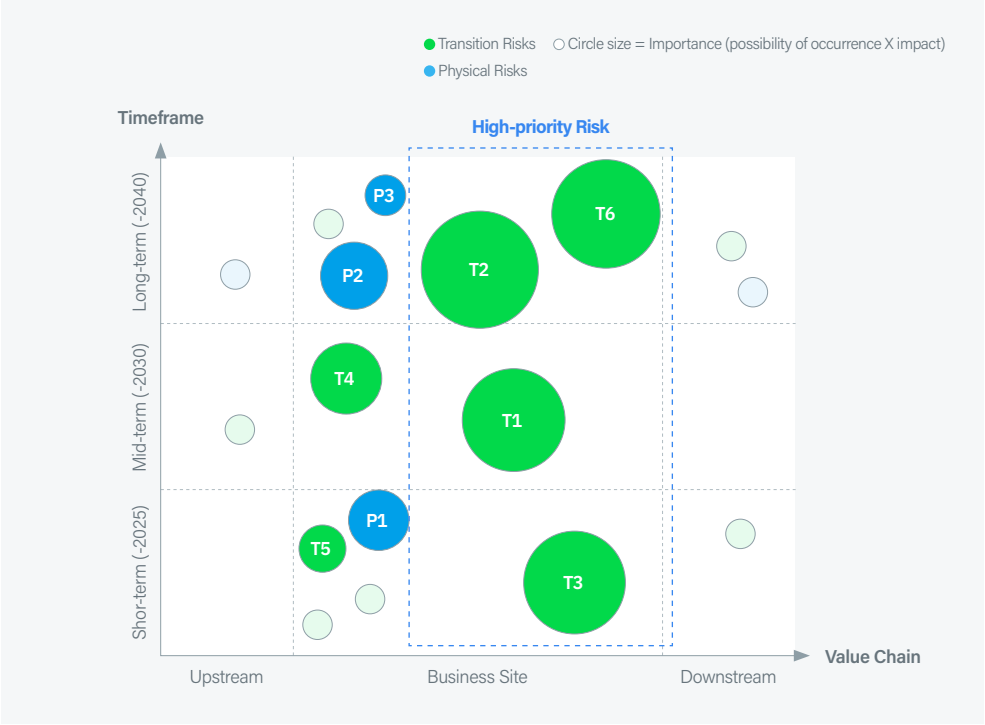
[1] IEA NZE 2050 (International Energy Agency Net Zero Emission 2050): Scenario presented by the IEA to achieve carbon neutrality by 2050

[2] National NDC (Nationally Determined Contribution): The national GHG reduction target, the Korean government has declared a goal of reducing GHG emissions by 40% by 2030 compared to 2018 levels.

[3] RCP (Representative Concentration Pathway): GHG reduction scenarios to reach the CO2 concentration thresholds by 2100 (420, 540, 670, 940 ppm)

1. Analysis results of climate-related risk and opportunity

(1) Climate-related risks



Risk type	Category	No.	Detailed risks	Possibility of occurrence	Impact
Transition Risk	Regulatory (current)	T1	**Increased burden of purchasing carbon credit**	**High**	**Mid**
		T2	**Increase of renewable energy procurement costs**	**High**	**Mid**
	Regulatory (new)	T3	**Increased burden of responding to domestic and overseas carbon regulations**	**High**	**Mid**
	Market	T4	Increased demands for global green data centers	Mid	Low
	Technology	T5	Increased R&D expenses related to technologies for reducing environmental impact of IDCs while maintaining performance	Low	Mid
	Reputation	**T6**	**Failure to achieve the Carbon Negative goal and the resulting impact on brand value decline**	**Mid**	**High**
Physical Risk	Acute	P1	Equipment damage due to typhoons and floods	Low	High
	Chronic	P2	Increase in IDC cooling expenses due to rising global average temperatures	Mid	Low
		P3	Water scarcity at business sites (head offices, IDCs) due to climate change	Low	Low

1) **Transition** Risk

A. [T1] Increased burden of purchasing carbon credit
[T2] Increase of renewable energy procurement costs

NAVER is subject to the national GHG emissions trading scheme, and is obligated to purchase carbon credit in the Korea Exchange ETS (K-ETS) market for the amount of carbon emissions that is in excess of the emission permit or to reduce emissions. Furthermore, NAVER is actively engaged in a variety of policies and regulations aimed at achieving global carbon neutrality goals and transitioning to an economic structure of a low-carbon society.

According to the national roadmap for carbon neutrality and green growth, as well as the Nationally Determined Contributions (NDC), an increase in domestic demand for renewable energy and a rise in renewable energy prices are expected. As a result, NAVER anticipates an increase in the procurement costs of renewable energy. The potential financial impact due to the potential weakening of the renewable energy supply chain is estimated to be an average of KRW 2.64 billion[1)] per year.

To mitigate these risks, NAVER has identified "creating an environment favorable for using and securing renewable energy" as an important initiative, and strives to improve renewable energy policies and ensure diversification of the supply chain with the Environment team playing a leading role.

NAVER takes active part in direct stakeholder engagement to advocate for renewable energy policy improvements. This includes engaging with government officials, policymakers, and institutions such as Korea Electric Power Corporation (KEPCO) to represent the perspective of renewable energy users. In addition, we participate in initiatives such as RE100, Corporate Renewable Energy Foundation (CREF), and Corporate Renewable Energy Initiative (CoREi) to collaborate with other stakeholders in the renewable energy market. Through these engagements, NAVER aims to contribute to improving the renewable energy supply chain and fostering indirect stakeholder engagement.

Moreover, NAVER is collaborating with a variety of entities in the renewable energy sector to ensure market stability through the diversification of the renewable energy supply chain and accessibility to various different renewable energy resources such as solar, wind, and hydro. This includes partnering and contracting with public institutions like the Korea Water Resources Corporation and energy platforms like ENlighten. We also seek to establish continuous partnerships with large, medium, and small businesses for renewable energy to mitigate and control the increase in renewable energy procurement costs.

Based on the awareness and mitigation efforts of such risks, it is anticipated that the successful implementation of the 2040 Carbon Negative roadmap will lead to a sustained reduction in the potential financial burden associated with GHG emission rights purchases. Additionally, the impact of additional costs resulting from the transition to renewable energy is expected to be managed at less than 0.1% of revenue.

[1)] Base on a scenario assuming a 5% increase in the unit price of renewable energy due to the weakening of the renewable energy supply chain compared to 2022; the average additional cost burden in the medium term (until 2030)

B. [T3] Regulatory (new) – Increased burden of responding to domestic and overseas carbon regulations

The Intergovernmental Panel on Climate Change (IPCC), an inter-governmental organization, has announced that in order to limit the Earth's average temperature increase to 1.5°C, rapid and comprehensive transformations are required across all sectors, including energy, land, infrastructure, and industry. In response to this, the International Financial Reporting Standards (IFRS) Foundation is establishing the International Sustainability Standards Board (ISSB) to develop global sustainability disclosure standards. These standards are expected to become widely adopted ESG disclosure standards in the global capital markets. Consequently, NAVER is predicted to face demands for disclosing information about the financial impacts of climate-related risks and opportunities.

In particular, ISSB's S2 climate-related disclosure demands companies to disclose their Scope 1, 2, and 3 GHG emissions, encompassing the entire value chain, including their consolidated affiliates. As a result, managing GHG emissions of NAVER's subsidiaries has become a critical task. We have therefore prioritized the calculation of Scope 1 and 2 emissions for our domestic subsidiaries based on the consolidation approach, and these emissions are then reflected as our Scope 3 emissions. In addition, to ensure more accurate climate-related disclosure, we established a new ESG task force team for our most climate-critical subsidiaries, such as NAVER Cloud and NAVER Webtoon.

NAVER will continue monitoring trends in both domestic and international ESG disclosure standards, while also spreading ESG management systems throughout all subsidiaries, including overseas corporations. This will enable us to effectively address the requirements for climate-related disclosure.

C. [T6] Reputation – Failure to achieve the Carbon Negative goal and the resulting impact on brand value decline

As climate change accelerates, there is a growing demand for companies to fulfill their environmental responsibilities. Particularly, as one of the largest platform companies in South Korea, NAVER faces high levels of attention from a variety of stakeholders, including the government, investors, users, and partners. If there is sustained negative feedback from stakeholders, it could lead to a decline in our company's reputation and brand value. In 2020, we declared our long-term GHG (Greenhouse Gas) emissions reduction target, "2040 Carbon Negative", aiming to maximize positive environmental impacts from our business activities while minimizing negative environmental impacts. We have also established a roadmap for achieving this goal. The achievement of NAVER's 2040 Carbon Negative target or our RE100 commitment is expected to face increasing demands from stakeholders, including consumers. The monitoring of NAVER's comprehensive long-term climate change response efforts, such as whether we have detailed implementation plans and risk management in place, will be improved. Particularly, in light of the growing concerns around Greenwashing, the absence of clear implementation plans could increase the reputational risk to our company in the medium to long term. If negative reputational issues arise, it is anticipated that consumer preference for our products and services may decline, leading to a decrease in brand value of NAVER.

Interbrand's 2022 Best Global Brands report estimated NAVER's brand value to be over KRW 7 trillion. However, it also assumed that the absence of achievement in the 2040 Carbon Negative target and the lack of transparency regarding climate change-related efforts may decrease our brand value by up to 0.5%, which translates into an approximate loss of KRW 35 billion in brand value.

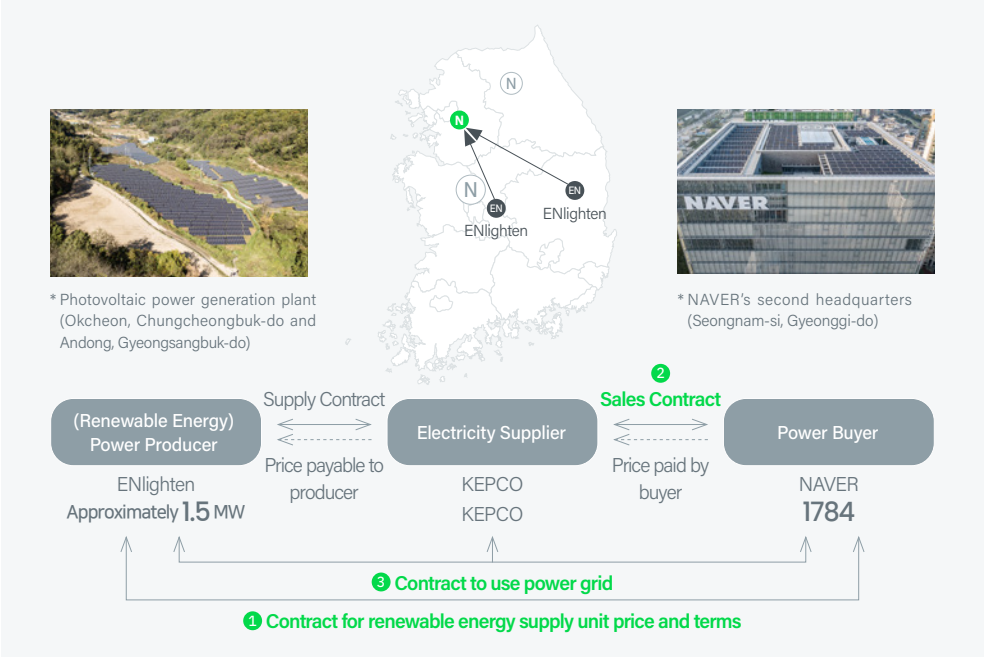
In response, NAVER is actively exploring procurement methods, such as power purchase agreements (PPAs), to introduce renewable energy and analyze their feasibility and effectiveness. As part of our plans to achieve RE100 and 2040 Carbon Negative targets, in December 2022, we at NAVER entered into third-party PPAs with KEPCO and ENlighten to secure renewable energy for our second headquarters – 1784. Through this third-party PPA, 1784 will be able to cover approximately 15% of our annual electricity consumption with renewable energy.

Furthermore, NAVER has signed an MOU with K-water aimed at "joint development for RE100 implementation and technological collaboration for ESG value dissemination." This collaboration was initiated based on the shared recognition of the need to achieve a carbon-neutral society to overcome the climate crisis. With this agreement as a foundation, NAVER aims to work together with K-water, which holds the largest amount of renewable energy in South Korea, to progress toward achieving RE100.

NAVER's efforts are expected to be effective not only in short-term renewable energy procurement but also from a medium to long-term perspective of achieving a 100% transition to renewable energy. This transition will be a foundation for environmentally friendly transformations in their entire IT services portfolio, including cloud, AI, search, and commerce. As a result, it is anticipated that customer satisfaction, product competitiveness, and overall sustainability will be improved. In addition, we have participated in global environmental initiatives such as RE100 and EV100 in 2022, while also reviewing and implementing the recommendations from these initiatives and various institutions to further enhance our environmental practices.

NAVER's commitment to achieving the Carbon Negative goal by 2040 includes actively and transparently disclosing our climate change response progress and expanding communication with stakeholders. Through these efforts, we're aiming to mitigate the risk of reputational damage to the company while enhancing our long-term corporate image.

Structure of Third-party PPA Contract for 1784



2) Physical Risk

A. [P1] Acute – Equipment damage due to typhoons and floods [P2] Chronic - Increase in IDC cooling expenses due to rising global average temperatures

Due to the increasing demand for digital platform services, data processing volume is rapidly rising. As a result, NAVER's GHG emissions are expected to continuously increase in the future, with over 90% of these emissions anticipated to be generated from the electricity used to operate our data centers.

Data centers' servers and equipment continuously emit heat, making cooling facilities crucial for maintaining their performance. With climate change, there is a possibility of prolonged periods of extreme heat or rising global average temperatures, leading to a reduction in the number of days suitable for free air cooling. This may result in increased energy consumption required for cooling. Moreover, climate change can lead to more frequent and intense extreme weather events, such as typhoons, floods, and rising sea levels. As a consequence, data centers face the risk of physical damage to their assets due to these natural disasters. Even if data centers are not directly affected by extreme weather events, there is a possibility of experiencing power supply instability.

NAVER assessed the physical risks by using RCP scenarios based on the IPCC's Fifth Assessment Report. Firstly, we analyzed the scenario in line with the Paris Agreement, where immediate GHG emissions reduction efforts are undertaken to limit global temperature rise to below 2°C (RCP 2.6). Subsequently, we compared this scenario with the worst-case scenario (RCP 8.5), which assumes no significant action to mitigate GHG emissions and follows the current trend of emissions.

NAVER has taken specific measures based on the analysis of the aforementioned scenarios to prevent equipment losses at our data centers in the event of extreme weather conditions. For our existing data center, "GAK Chuncheon", we have incorporated disaster response capabilities and emergency power generation systems into its design to better cope with meteorological disturbances. In the case of our new data center project, "GAK Sejong", we have strategically chosen a location less vulnerable to the impact of weather-related events such as rising sea levels. This ensures the facility is better prepared to handle potential physical risks associated with climate change. In addition, as we are constructing a second hyper-scale IDC, which is expected to concentrate energy and power usage, we have carefully selected a location with lower network loads to ensure stable IDC operations.

NAVER's data centers utilize a natural cooling system that relies on external cold air to lower server room temperatures. However, due to the occurrence of abnormal heatwaves caused by climate change, hot and humid air cannot be used for server cooling. In such cases, the data center has to restrict external air usage and switch to internal circulation (internal cooling) methods. The reduction in the number of days suitable for external air usage increases the power consumption required for data center cooling, leading to an increase in cooling costs and a temporary increase in PUE due to higher IT equipment power load. To address these challenges, the upcoming data center "GAK Sejong", scheduled for completion in 2023, incorporates NAMU 3rd generation, a hybrid air conditioning system that combines direct and indirect external air usage. Building on the operational expertise of "GAK Chuncheon", NAMU 3rd generation employs NAVER Cloud's unique technology (patent application completed in April 2020) to leverage heat exchange with indirect external air during periods of low external air temperature for improved energy efficiency. Furthermore, "GAK Sejong" has been designed with careful consideration of orientation layout to maximize the use of natural external air. This design aims to minimize environmental impact and operational risks associated with the data center's operations. NAVER is committed to continuous investment in data center facilities upgrades and is dedicated to implementing proactive strategies to minimize economic losses resulting from natural disasters.

(2) Climate-related opportunitie

Classification	No.	Detailed opportunities	Possibility of occurrence	Impact
Resource efficiency	O1	Energy efficiency improvements through IDC performance improvements	High	Low
Energy source	O2	Reduction of energy costs and emission trading costs through transition to renewable energy	High	Low
	O3	Stabilization of energy cost through renewable energy procurement	Mid	Low
	O4	**Increase of capital availability due to the increasing number of investors who prefer low-carbon industries**	**Mid**	**High**
Products and services	**O5**	**Increase in users and competitiveness enhancement on the back of the expansion of eco-friendly services**	**Mid**	**High**
Market	**O6**	**Expansion of C2C business related to circular economy due to growing interest in eco-friendly practices**	**High**	**Mid**
Resilience	**O7**	**Strengthening of climate response capability through active climate actions**	**High**	**Mid**

1) Opportunity

A. [O4] Energy Source – Increase of capital availability due to the increasing number of investors who prefer low-carbon industries

We forecast that there will be a continued increase in investment demand for sustainability bonds and green bonds owing to a rise in investors who prefer low-carbon industries and place importance on investments' social responsibility. In March 2021, NAVER issued a USD 800 million worth of sustainability bond, a first of its kind among Korea's tech and Internet companies. This bond is a special-purpose bond that is combined of green and social bonds, and funds can be used for comprehensive purposes in eco-friendly business areas and to resolve social issues. In addition, sustainability bonds, special-purpose bonds, are generally issued at lower interest rates than general bonds and serve as a means for stable procurement of funds that are needed for mid- to long-term eco-friendly projects, and therefore are recognized as a climate change opportunity. For example, the interest rate of ESG bonds that NAVER issued is around 0.5-6%p lower than the average interest rate of corporate bonds, leading to interest cost reduction effects through low interest rates.

NAVER is utilizing the funds raised through ESG bonds for a variety of environmentally sustainable initiatives. These include securing renewable energy sources, fostering an eco-friendly SME ecosystem, and establishing an environmentally friendly IT infrastructure. As part of our efforts to boost our environmental investments in 2022, we have implemented eco-friendly technology investments to promote energy savings at our second data center, "GAK Sejong", and second headquarters, "1784". Going forward, we plan to continue issuing bonds to acquire funds and actively expand investments in eco-friendly technologies for energy savings throughout the company.

More detailed information about NAVER's ESG bonds can be found on our corporate website under the "Sustainable Finance Framework".

B. [O5] Products and Services – Increase in users and competitiveness enhancement on the back of the expansion of eco-friendly services
[O6] Market - Expansion of C2C business related to circular economy due to growing interest in eco-friendly practices

Consumers prefer products that minimize environmental impact and create social value throughout the production, distribution, and consumption phases. They are willing to pay higher prices for such products and often consider eco-friendliness as a criterion when making brand choices. To meet consumer preferences, we are actively exploring ways to enhance eco-friendliness in all of our services and seeking new business opportunities that can generate eco-friendly value. In pursuing these initiatives, NAVER aims to provide users with new value through continuous eco-friendly innovation, while also establishing ESG-based growth drivers for the company. NAVER is committed to making multidimensional efforts to deliver on this vision.

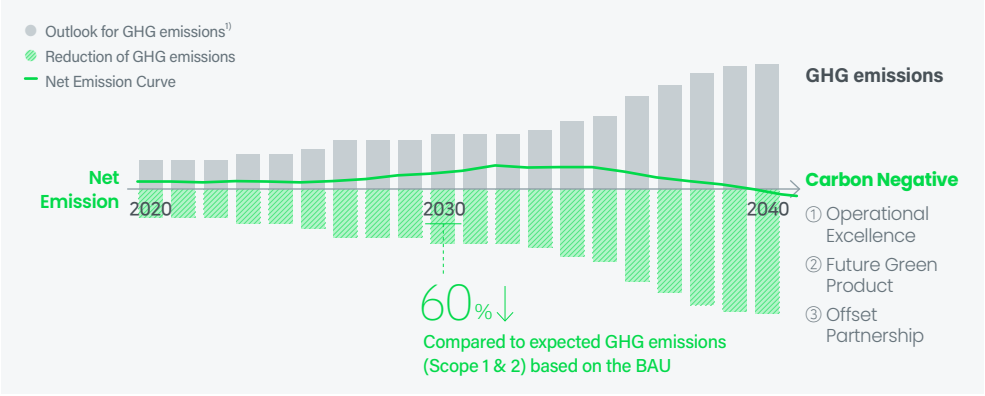
NAVER is proactively responding to the ESG-related market impact, starting with our commerce business, which holds the most significant influence. We are seeking opportunities for positive transformations in areas with rapidly increasing demand in the commerce industry, such as eco-friendly product sales, eco-friendly packaging materials, and eco-friendly logistics. Through strategic collaborations with large, medium, and small business partners, we are making substantial efforts for tangible improvements. By expanding eco-friendly products and taking proactive measures, the commerce business unit, which accounts for approximately 22% of the total revenue, is assumed to experience a 5% increase in sales, which can translates into a KRW 90 billion increase in revenue.

NAVER is seeking to enhance our competitiveness in the global C2C market and increase its brand value as an ESG-focused company through the acquisitions of KREAM, Poshmark, and Wallapop. Leveraging our experience in elevating ESG strategies within the commerce business, we aim to explore sustainable value creation opportunities in the financial, content, cloud, and other industries where NAVER and our subsidiaries operate. By doing so, we expect to achieve market expansion, along with improving our long-term reputation.

Our Climate Goals

2040 Carbon Negative Roadmap

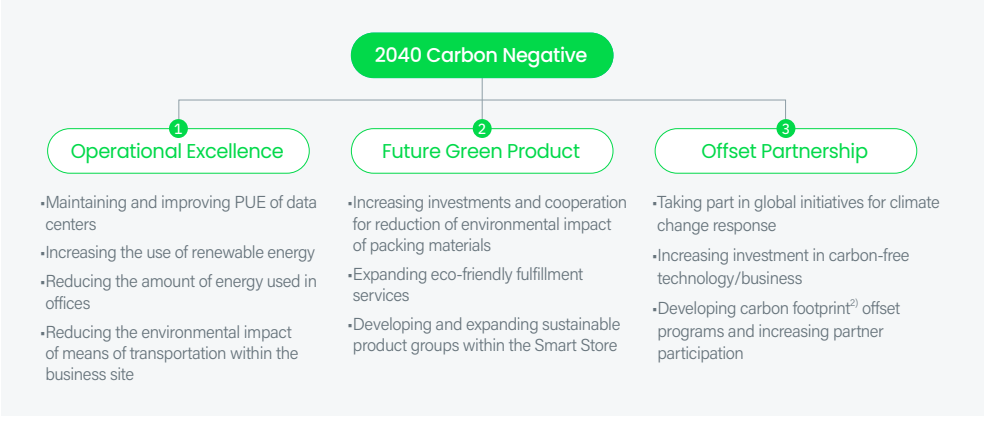
99% of NAVER's greenhouse gas (GHG) emissions is generated from the electric energy consumption at our internet data centers (IDCs) and office buildings. In addition, with the growth of our businesses, NAVER's GHG emissions are forecast to increase over the next decade, which may serve as a risk to easing climate change. NAVER recognizes the importance of the environment for sustainable business, and thus we established the "2040 Carbon Negative" strategy in 2020 to maximize environmentally salubrious effects while minimizing negative impacts.



[1] An emission projection estimates future emissions based on current emissions

2040 Carbon Negative Implementation Strategy

Carbon Negative is a strategy of offsetting the net amount of GHG emissions to 0 or less. To achieve this goal, we have set the following three detailed strategic directions and plan to implement relevant activities. By ① aiming for operational excellence to reduce our environmental impacts, ② pursuing avoided emissions by discovering eco-friendly services, and ③ expanding external partnerships, we will actively take part in accelerating the transition to a low-carbon economy. In this process, we are making joint efforts with several partners who use NAVER platforms to expand the eco-friendly ecosystem.



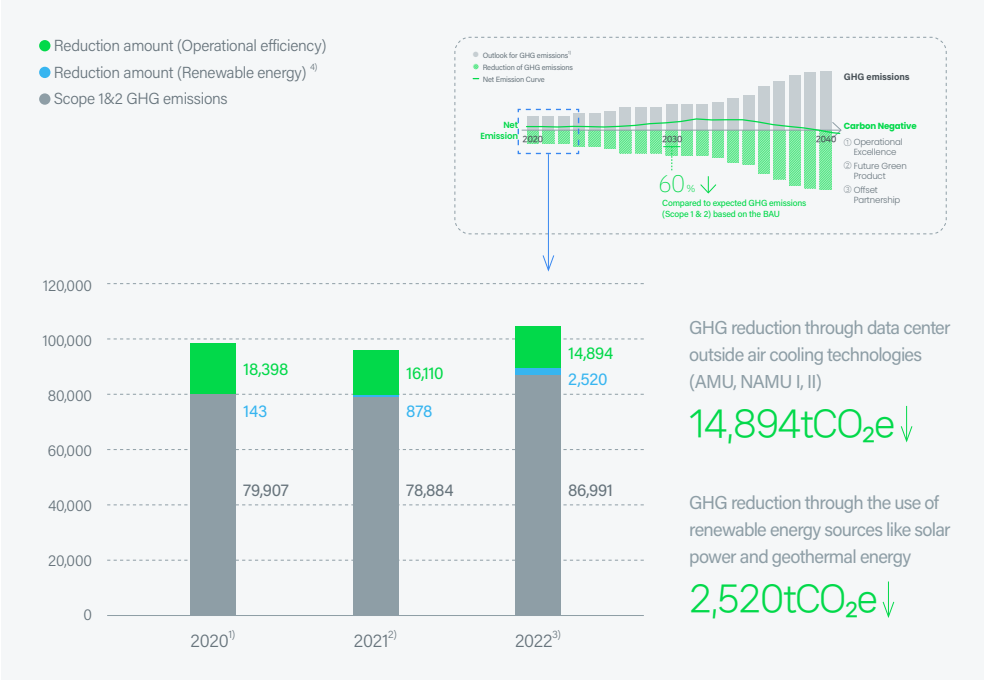
[2] Total greenhouse gas directly/indirectly emitted by an individual or organization

NAVER Carbon Footprint

GHG Scope 1&2 Emissions Status and Reduction Amount

NAVER is subject to the national GHG emissions trading scheme, and we calculate our Scope 1 & 2 GHG emissions based on relevant guidelines. NAVER's total GHG emissions in 2022 were 86,991 tCO_2e, a year-on-year increase of about 10%, As the second office building 1784 began full-scale operation in 2022 and a new leased site was added to the emission calculation range, the absolute amount of GHG emissions increased. However, the GHG intensity decreased by 8.5% from the previous year to 10.58 tCO_2e/KRW billion.

NAVER has made significant efforts to reduce GHG emissions and energy consumption by developing natural energy-based data center cooling technologies, such as AMU, NAMU I, II, and III. We also have actively adopted energy-efficient equipment and utilize renewable energy sources, such as geothermal and solar power, to contribute to GHG reduction. As a result of these efforts, the data center GAK Chuncheon maintains an impressive Power Usage Effectiveness (PUE) of 1.1 – the highest level among domestic data centers and is considered one of the best globally. The development of energy-saving technologies and the use of renewable energy have led to a total reduction of 17,414 tCO_2e in GHG emissions in 2022.



GHG Reduction Goal and Achievement

	Goal for 2022	2022 Performance	Achievement Rate
GHG emissions (tCO_2e)	84,122	86,991	96.6%
GHG reduction (tCO_2e)	17,375	17,415	100.2%
GHG intensity (tCO_2e/KRW billion)	11	10.78	102.0%

GHG Scope 3 Emissions Status

NAVER manages and calculates not only direct emissions (Scope 1) and indirect emissions (Scope 2) from its operations but also external emissions throughout the company's entire value chain, including employee commuting and supply chain activities (Scope 3). Among the 15 specific categories of Scope 3, NAVER has completed the calculations for 13 (8 in the Upstream and 5 in the Downstream) following the GHG Protocol guidelines. These calculations have been verified by third-party experts. The Upstream category includes external emissions generated in our supply chain, while the Downstream category includes Scope 1 & 2 emissions from supply subsidiary companies. In addition, we plan to enhance our subsidiaries' ESG systems and expand ESG activities throughout the supply chain to improve the accuracy of Scope 3 emissions and set reduction targets accordingly.

(Unit: tCO_2e)

Category			2022
Scope3	Total		209,708
	Upstream	1. Purchased goods and services	83,826
		2. Capital goods	
		3. Fuel- and energy-related activities	7,137
		4. Upstream transportation and distribution	10
		5. Waste generated in operations	249
		6. Business travel	453
		7. Employee commuting	2,035
		8. Upstream leased assets	40
	Downstream	9. Downstream transportation and distribution	2
		11. Use of sold products	11,392
		12. End-of-life treatment of sold products	131
		13. Downstream leased assets	424
		15. Investments	104,009

* Began to compile GHG emissions data in 2021

Our Action

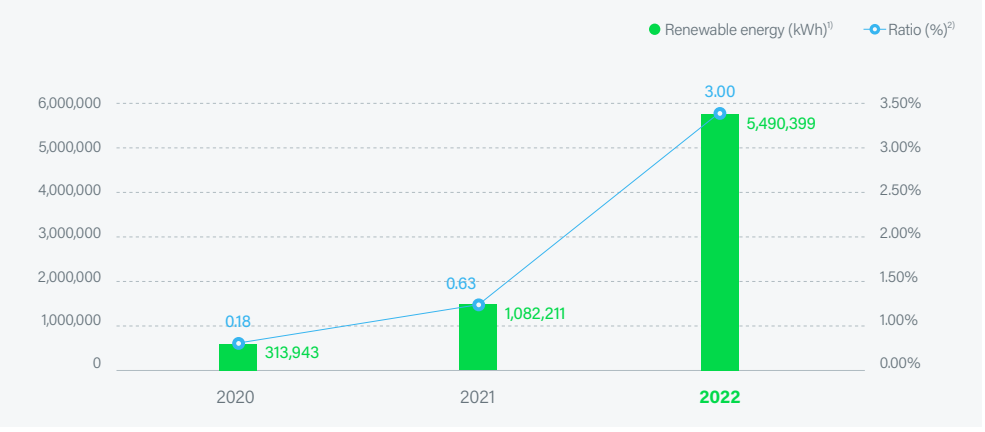
1) Operational Excellence – Reducing Our Environmental Impact

99% of NAVER's GHG emissions are generated from electricity use, rendering the reduction of carbon emissions from the use of electricity its biggest challenge. To solve this challenge, NAVER has been steadily seeking ways to secure renewable energy through external cooperation. As a result, we were able to secure renewable energy for the operation of our second office building "1784" through a power purchase agreement (PPA) with KEPCO and ENlighten in December of 2022. Concluding PPA has been a part of our plan to achieve RE100 and 2040 Carbon Negative. Through the third-party PPA, 1784 will source approximately 15% of its annual use of electricity from renewables.

Since 2012, when NAVER planned to build GAK Chuncheon, it has been thinking about ways to reduce its energy consumption and GHG emissions because power consumption for data management will continue to increase unless its corporate growth is stagnated. GAK Chuncheon is reducing its GHG emissions by using natural energy and developing energy-efficient facilities to reduce its electricity consumption. Power Effectiveness (PUE) is a measure of the efficiency of a data center. It is the total amount of power divided by the amount of power consumed by the IT equipments. The closer the number is to 1, the greater the power savings. GAK Chuncheon maintains an average PUE of 1.1 by leveraging our advanced eco-friendly technology and improving operational efficiency. It is the highest level not only in Korea, but also among all IDCs of global IT companies.

In addition to emissions from Scope 2 electricity use, NAVER is continuously reviewing plans to reduce its Scope 1 GHG emissions. In 2022, we joined the EV100 initiative to reduce GHG emissions from vehicle fuel combustion and promised to switch 100% of our corporate-owned vehicles to eco-friendly ones and build EV charging stations at all of our office buildings by 2030. Accordingly, in 2022, we switched 13% of our corporate vehicles to EVs and built a total of 82 EV charging stations in Green Factory and 1784. Reduced mobile combustion GHG emissions, owing to the transition to EVs, amounted to 5,763 kgCO2e. EV charging facilities at 1784 and Green Factory are accessible by not only NAVER employees but also by customers and visitors. In anticipation of the expansion of eco-friendly EVs, we have secured facilities in advance to charge approximately 300 EVs, in addition to the currently installed charging stations. By building EV charging stations, we encourage our employees to switch to eco-friendly vehicles and reduce carbon emissions while commuting.

Renewable Energy Consumption



[1] Renewable energy: Self-facility for solar power generation + self-facility for geothermal energy + PPA for renewable energy
[2] The ratio of renewable energy excluding geothermal energy: 0.15% in 2020, 0.17% in 2021, 0.31% in 2022

2) Future Green Product – Developing Green Products and Service Solutions

NAVER is making efforts not only to reduce and systematically manage Scope 1, 2, and 3 GHG emissions directly and indirectly generated from our business operations but also to explore ways to contribute to the overall environmental transition of society as a platform company.

NAVER aims to build a digital ecosystem where users can contribute to carbon emission reduction through the use of the platform. Furthermore, we expect to create a positive cycle by transparently disclosing the contributions of users who utilize NAVER's eco-friendly services to reduce GHG emissions in society, thus encouraging a greater societal transition toward sustainability.

As part of these social reduction efforts, the first area where we measured our eco-friendly achievements is the electronic document service. The social contribution from using the electronic document service was quantitatively calculated using the results-oriented approach recommended by the World Resources Institute (WRI) in our "Emission Reduction Estimation and Reporting" working paper. By comparing the emissions generated from the baseline scenario (usual base case) with the emissions resulting from the low-carbon service, we calculated the social reduction contribution. The calculation methodology underwent third-party verification to ensure its reliability.

At NAVER, we plan to actively seek and improve eco-friendly aspects in the variety of services we offer. We aim to quantitatively calculate the social reduction impact resulting from the use of NAVER's eco-friendly services using reliable and valid methods. By doing so, together with our users, we are aiming to contribute to the transition toward a low-carbon society.

Scope 1, 2, 3 and Social Emissions Reduction

Major Activities for Social Emissions Reduction

Eco-friendly e-document service

As a certified public electronic document intermediary recognized by the Ministry of Science and ICT, NAVER provides stable and eco-friendly e-document services. NAVER's e-document service replaces traditional paper-based notifications and statements with mobile electronic notifications, offering convenience to users. By doing so, we play a key role in reducing the social costs and carbon emissions associated with postal production and delivery. As of 2022, NAVER's electronic document service has replaced a cumulative total of 206 million paper documents, which has resulted in the protection of 24,000 trees.

In addition, NAVER has conducted the calculation of carbon reduction from e-documents in our unique approach and verified the methodology through third-party verification. To calculate the baseline emissions, we assumed that all documents before the e-document service were delivered as paper mail through postal services and then disposed of. This baseline considered emissions from paper production, postal delivery, and paper waste recycling stages. In addition, we considered the power consumption of our data center GAK Chuncheon, which stores and processes data related to electronic documents, and the carbon emissions resulting from users accessing e-documents. GAK Chuncheon processes approximately 16 million e-documents per server annually, producing 254 tons of carbon in 2022. On the other hand, if the same amount of e-documents were produced, delivered, and disposed of as paper mail, it would have generated 1,548 tons of carbon emissions. As a result, the carbon reduction achieved through the electronic document service amounts to 1,294 tons. This calculation result has been verified by the Korea Standards Association, allowing NAVER to provide organization-specific carbon reduction data to administrative and public institutions that utilize the e-document service.

Eco-friendly Shopping

Since 2021, NAVER has been providing environmental certification information on product detail pages in our Smart Store, aiming to assist consumers in better understanding eco-friendly product details and allowing sellers to leverage this eco-friendly certification information as a competitive advantage in their product sales on NAVER Shopping.

The Korea Environmental Industry and Technology Institute's "Environmental Labeling Certification" is a prominent eco-certification that identifies products that significantly improve their environmental performance compared to other products of the same purpose. By displaying the certification logo, we provide consumers with relevant information and encourage companies to develop and produce eco-friendly products through incentives, promoting voluntary environmental improvements. The "Low Carbon Certification" is another important certification that verifies reduction measures such as process improvement to achieve greenhouse gas reductions beyond the national greenhouse gas reduction targets. Its significance has been increasing recently. In addition, we also provide information on the "Vegan Certification" from the Korea Agency of Vegan Certification and Services, the first vegan certification agency in Korea, to cater to the needs of consumers seeking vegan products in the food and cosmetics industries, which do not contain any animal-derived ingredients.

Going forward, we plan to support a feature that provides reliable overseas eco-certification information in addition to domestic eco-certification information on product information.

Eco-friendly map service

The number of electric vehicle (EV) users or those considering using EVs is increasing, leading to rising demand for EV-related information on NAVER Maps. EVs have seen rapid growth, reaching 230,000 units in 2022 and 400,000 units as of May 2023, and thus the number of charging facilities has also increased. However, users still encounter difficulties in locating and utilizing charging stations. To address these challenges, NAVER Map has been significantly improving its EV charging station information since 2022, with an aim is to enhance the convenience for EV users, from facilitating the easier discovery of charging stations to reducing the time and cost associated with charging.

These improvements have enabled users to find more EV charging stations when searching on NAVER Map. They can also quickly and conveniently access important information that users consider when using charging stations, such as availability, parking fees, operating hours, charging costs, and station status. Going forward, NAVER Map will make continuous efforts to enhance its functions, ensuring that users can enjoy an enhanced and convenient EV experience.

3) Offset Partnership - Expanding External Partnerships

NAVER joined the global environment initiatives in earnest in the second half of 2022, joining forces to tackle climate change and preserve the environment. In August 2022, we joined RE100, a global initiative that aims to cover all electricity used by businesses with renewable energy. Then, in October, we joined EV100, a global initiative aimed at reducing GHG emissions through the transition to eco-friendly vehicles. We also participate in the CDP Climate Change and transparently disclose our climate change risks and carbon information according to the TCFD recommendations.

Meanwhile, NAVER has been taking an active part in engagement activities for institutional support and policy improvement required to enable businesses in Korea to achieve RE100. We participate in the RE100 Enterprise Alliance and submitted policy opinions to help companies stably expand the use of renewable energy. In addition, we are engaged in various forums and meetings.

We are also taking active part in implementing our RE100 commitment through a variety of collaborations with partners including K-water and the Carbon Neutrality & Green Growth Commission, while striving to raise awareness of climate change, and carbon neutrality-related policies, and promote the spread of ESG values. Going forward, we will continue to encourage our users to participate in global efforts for environmental protection and climate change mitigation through diverse external partnerships.

Our Data

NAVER is focused on data management for its GHG emissions, total energy consumption and renewable energy consumption, and PUE of its IDCs to manage climate-related risks and opportunities.

Scope 1&2 GHG Emissions

(Unit: tCO2e)

	Classification	2020	2021	2022
Total Scope 1&2 Emissions	**Total**	**79,907**	**78,872**	**86,991**
	Green Factory	6,731	5,888	3,972
	1784	-	1,636	9,889
	Connect One	-	923	1,349
	NAVER Square	-	693	683
	Leased business sites	-	403	4,058
	Data Center GAK Chuncheon	73,176	69,329	67,040
Scope 1	Green Factory	197	204	17
	1784	-	0	289
	Connect One	-	265	454
	NAVER Square	-	8	37
	Leased business sites	-	4	49
	Data Center GAK Chuncheon	33	44	44
Scope 2	Green Factory	6,534	5,684	3,955
	1784	-	1,636	9,600
	Connect One	-	658	895
	NAVER Square	-	685	646
	Leased business sites	-	399	4,009
	Data Center GAK Chuncheon	73,143	69,286	66,996

* GHG emissions for 1784, Connect One, NAVER Square, and leased facilities have been aggregated since 2021.

* The aforementioned emissions are based on data as of June 30, 23.06.30, and may be subject to change based on future evaluations of environmental suitability by the Ministry of Environment.

Scope 1&2 GHG Emissions

(Unit: tCO2e)

		Classification	2020	2021	2022
Scope 3		**Total**	**-**	**215,556**	**209,708**
	Upstream Downstream	1. Purchased goods and services	-	70,791	83,826
		2. Capital goods			
		3. Fuel- and energy-related activities	-	6,558	7,137
		4. Upstream transportation and distribution	-	0	10
		5. Waste generated in operations	-	132	249
		6. Business travel	-	51	453
		7. Employee commuting	-	1,589	2,035
		8. Upstream leased assets	-	42	40
	Downstream	9. Downstream transportation and distribution	-	4	2
		11. Use of sold products	-	18,419	11,392
		12. End-of-life treatment of sold products	-	184	131
		13. Downstream leased assets		422	424
		15. Investments		117,364	104,009

* Began to compile GHG emissions data in 2021

Energy Consumption

(Unit: TJ)

	Classification	2020	2021	2022
Total Energy Consumption	**Total**	**1,649**	**1,646**	**1,819**
	Green Factory	143	124	84
	1784	-	34	209
	Connect One	-	18	27
	NAVER Square	-	14	14
	Leased business sites	-	8	84
	Data Center GAK Chuncheon	1,506	1,448	1,401
Direct Energy Consumption	**Total**	**4.5**	**9.7**	**16.3**
- LNG	Green Factory	3.9	1.9	0.3
	1784	-	-	1.8
	Connect One	-	5.2	8.9
	NAVER Square	-	0.1	0.7
	Leased business sites	-	0.1	1.0
	Data Center GAK Chuncheon	0.4	0.5	0.4
- Mobile combustion	1784	-	1.6	2.9
	Data Center GAK Chuncheon	0.1	0.0	0.0
- Diesel	Green Factory	0.01	-	-
	1784	-	-	-
	Connect One	-	0.0	0.0
	NAVER Square	-	0.0	-
	Data Center GAK Chuncheon	0.1	0.3	0.3
Indirect Energy Consumption	**Total**	**1,645**	**1,640**	**1,804.3**
- Electricity	Green Factory	130	113	77.5
	1784	-	32	189.6
	Connect One	-	14	18.7
	NAVER Square	-	14	13.5
	Leased business sites	-	8	81.5
	Data Center GAK Chuncheon	1,506	1,448	1,400.0
- Steam	Green Factory	8.5	8.2	6.6
	1784	-	2.9	14.0
	Leased business sites	-	-	2.9

* GHG emissions for 1784, Connect One, NAVER Square, and leased facilities have been aggregated since 2021.

Our Data

Renewable Energy Consumption

(Unit: MWh)

Classification		2020	2021	2022
Renewable Energy Consumption	**Total**	**314**	**1,082**	**5,490**
Portion of Renewable Energy Consumption (Unit: %)		0.2%	0.6%	3.0%
- Geothermal power	Green Factory	101	101	5
	1784	-	684	4,929
- Solar power	1784	-	22	187
	Connect One	47	62	61
	Data Center GAK Chuncheon	213	213	207
- Renewable Energy PPA	1784	-	-	101

* GHG emissions for 1784 have been aggregated since 2021.

Power Usage Effectiveness (PUE)

Classification		2020	2021	2022
PUE	Data Center GAK Chuncheon	1.09	1.10	1.10

* PUE: 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 Risk & Opportunity Management Performance – Reducing Our Environmental Impact

(Unit: tCO_2e)

Classification		2020	2021	2022
GHG Emissions Reduction	**Total**	**-**	**16,967**	**17,414**
Saving of electricity for air-conditioning and heating by adopting geothermal energy	Green Factory	-	28	2
	1784	-	716	2,264
Saving through renewable energy PPA	1784	-	-	46
Saving by producing renewable energy	1784	-	10	85
	Connect One	-	26	28
	Data Center GAK Chuncheon	99	98	95
Saving through office management	Data Center GAK Chuncheon	7,709	6,726	6,197
Saving by adopting natural air-conditioning and ventilation facility		10,963	9,363	8,697

NAVER