Groundhog Technologies
2024 ESG Report

Groundhog

Contents

About This Report

This report is prepared to communicate sustainability matters of concern to shareholders, employees, customers, suppliers, and other stakeholders. In addition to addressing their interests, this report aims to appropriately disclose the company's actual efforts in advancing key issues such as corporate governance, environmental protection, and social engagement.

Reporting Guidelines

This report has been prepared in accordance with the latest Global Reporting Initiative (GRI) Sustainability Reporting Standards, as well as the most recent indicators issued by the Sustainability Accounting Standards Board (SASB). For detailed mapping of the report content against GRI Standards and SASB indicators, please refer to the appendix.

Reporting Period

January 1 to December 31, 2024.

Reporting Cycle

This report is published annually. The previous report was released on May 3, 2024.

Reporting Scope and Boundary

Unless otherwise noted within specific sections, the scope of this report primarily covers Groundhog Technologies' Taiwan headquarters operations. Financial data and Scope 3 greenhouse gas emissions disclosures follow the boundary of Groundhog Technologies and its consolidated subsidiaries. There were no significant changes to the organization's structure, ownership, or supplier relationships during the reporting period.

External Verification

This report has not yet undergone assurance or verification by an independent third-party assurance body.

Messages From CEO

At Groundhog Technologies, we believe that true innovation lies not only in advancing technology but also in embracing our responsibility to society and the environment. As pioneers in mobile network optimization and advanced analytics, we are committed to building a low-carbon, sustainable future - one solution at a time.

Sustainability is not a destination, but an evolving journey. It requires the dedication of our people and the trust of our stakeholders. From product design to customer service, we integrate energy efficiency, carbon reduction, and operational excellence into every aspect of our work.

Our technologies help telecom operators streamline base station deployment, reducing the need for resource-intensive fieldwork and minimizing greenhouse gas emissions. In response to global challenges, we have transformed our services to remote support models - cutting travel, lowering our carbon footprint, and enhancing efficiency.

Strong governance, information security, and client trust are the cornerstones of our resilience. Through continuous improvement and alignment with international ESG standards, we strengthen our internal processes, enhance transparency, and elevate our impact.

This report highlights our efforts in innovation, sustainability, and responsible governance. We invite you to join us on this shared journey toward a greener, more resilient future.

"Technology-Driven for a Sustainable Future"

David Chiou.

Intro

Groundhog is committed to addressing some of the biggest challenges in the telecommunications industry through innovative and sustainable solutions, giving back to our society, and enhancing the mobile communications and digital industry.

About Groundhog →

Our Solutions →

Financial Results →

Customer Service →

Material Topics Overview

Material Topic :	2. Economic Performance
Significance	Continuously optimize financial and operational performance to enhance resource allocation efficiency and support long-term sustainability goals
Commitment	Strengthen relationships with existing clients and actively expand new customer sources to increase revenue and profitability
Strategy & Actions	Continue investing in R&D and expand the customer base
Performance Goals	The Board of Directors, as the highest decision-making body, oversees overall operations and policy implementation
Responsible Unit	All Departments

Material Topic :	17. Customer Service
Significance	Deliver efficient and professional services to strengthen customer relationships, enhance market competitiveness, and increase loyalty
Commitment	Establish a customer-oriented mindset and quality management system; gather feedback for continuous service improvement
Strategy & Actions	• Analyze customer feedback monthly to review and enhance service • Maintain customer engagement and retention
Performance Goals	No major customer complaints
Responsible Unit	All Business Departments

Performance Highlights

1. Groundhog Technologies was successfully listed on the Taiwan Stock Exchange in 2024 under the Digital Cloud sector, stock code 6906.

2. Expanded global telecom presence by securing a contract with Vodafone Idea, India's third-largest telecom operator, reaching over 50% market share in India by the end of 2024.

3. Achieved record-high revenue in 2024 with zero delays in product delivery, reinforcing strong customer trust.

About Groundhog

Founded in 2001, starting from the Massachusetts Institute of Technology (MIT). Groundhog Group is a global leader in big data analytics for mobile networks, even before its establishment, it won the semi-final prize in the MIT Entrepreneurship Competition. It is one of the earliest high-tech companies in the world to base its research on the behavioral patterns of mobile phone users and to develop massive data analysis techniques for mobile communications. With many years of experience in telecom data research and approximately forty patents in telecom data analysis, the company has a unique competitive advantage and is actively developing various innovative applications.

Groundhog Technologies has independently developed specialized platforms for the telecommunications industry, including the mobile network optimization and positioning platform (CovMo™), the mobile intelligent advertising platform (Mobility Intelligence™), and RealMotion™. These platforms assist telecom operators in tracking all mobile user locations and network quality in real-time across the entire network. They provide multi-dimensional insights into mobile users' movement patterns and usage behaviors, transforming vast amounts of telecom data into valuable solutions.

Clients span across all five continents, primarily serving global telecom operators and international advertising agencies. These include the world's third-largest telecommunications giant, Bharti Airtel; Saudi Arabia's top two operators, STC and Mobily; Japan's Rakuten Mobile; Asia's telecommunications powerhouse, Singtel Group; Taiwan's FarEasTone Telecommunications; Indonesia's top two telecommunications leaders, Telkomsel and Indosat Ooredoo Hutchison: the telecom giant Ooredoo Group spanning across the Middle East, Africa, and Asia; and Japan's large multinational advertising agency, Dentsu Group …etc. Groundhog Technologies derives over 80% of its annual revenue from overseas markets, making it one of the few Taiwanese wireless communication software companies focused primarily on the international market.

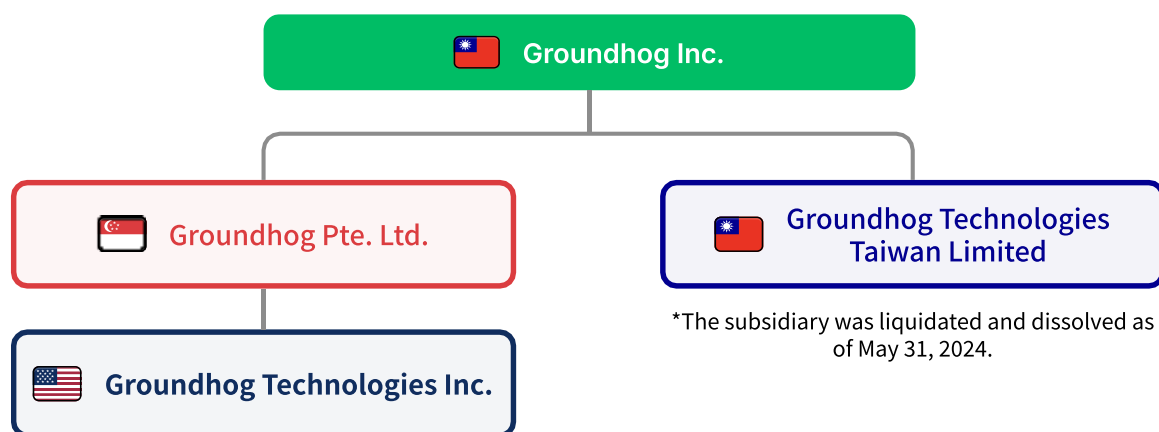## ⬤ Groundhog Footprints with Our Partners

Grounding Our Roots in Taiwan

Based on the concept of growing up in Taiwan and contributing to Taiwan, Groundhog Group planned to be listed in Taiwan. Therefore, Groundhog Inc. was established in 2019. The operation and R&D headquarters are both set in Taiwan, and it was successfully listed on the Taiwan Stock Exchange on January 15, 2024. Listed on the exchange, stock code 6906, industry category is digital & cloud services. The following is the organizational chart of Groundhog Group:

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                         ┌──────────────────────────┐
                         │  🇹🇼  Groundhog Inc.       │
                         └──────────────────────────┘
                    ┌─────────────┴───────────────┐
        ┌────────────────────────┐    ┌──────────────────────────────┐
        │ 🇸🇬 Groundhog Pte. Ltd. │    │ 🇹🇼 Groundhog Technologies     │
        └────────────────────────┘    │      Taiwan Limited            │
                    │                  └──────────────────────────────┘
        ┌──────────────────────────────┐
        │ 🇺🇸 Groundhog Technologies Inc.│    *The subsidiary was liquidated and dissolved as
        └──────────────────────────────┘        of May 31, 2024.
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Our Solutions

CovMo™ Mobile Network Optimization Positioning Platform

CovMo™ is the flagship product of Groundhog Technologies. Currently, CovMo™ revenue accounts for more than 90% of the total revenue. Customers are from five continents, and the platforms deployed around the world simultaneously analyze big data from more than 800 million mobile phones.

CovMo™ is a mobile network optimization and positioning platform independently developed by Groundhog, the first launched in the world, and continuing to have a leading market share. It analyzes, decodes and compiles network signaling data into meaningful information to help mobile operators optimize and troubleshoot the networks.

This is not only different from the simple use of conventional triangulation positioning and multi-dimension positioning methods, but also more efficient and effective than traditional drive test. The positioning accuracy is the first in the industry. In the 5G era, there will be more and different data. Products that can convert this additional data into system parameters will be able to more accurately locate and solve problems, and to be more competitive.

The main features of CovMo™ are as follows:

  I. More than 150 mobile network key performance indicators (KPIs), covering network coverage and quality, accessibility, continuity, mobility, traffic and other analysis aspects, assisting telecom operators in network deployment. In each stage, CovMo™ can quickly identify the root cause for poor user communication experience for better network management and user experience optimization tasks.

 II. Multiple advanced filtering fields clearly distinguish between indoor, outdoor, moving and stationary modes.

III. Mobile phone user-centered geolocation services ensure a comprehensive review of communication quality from the subscriber's perspective.

IV. User friendly interface design and intuitive user experience, multiple map window presentation and comparison, quick view and deep-dive analysis of network problems in specific locations.

 V. Base station automatic optimization function, including improving interference among adjacent base stations, antenna orientation and tilt azimuth, etc.

VI. End-to-end signaling call trace support from various equipment manufacturers and network management equipment suppliers.

CovMo™ presents signal strength using color coding in 3D images, clearly showing the number of users in each area. It helps telecom operators improve signal quality, optimize base station performance, and provides recommendations for future deployment of base stations and small cells.

Mobility Intelligence™ Mobile Smart Advertising Platform

Data Monetization is a growth opportunity that companies with large amounts of behavioral or consumption data are paying great attention to. Under the premise of protecting the privacy of telecomsubscribers, Groundhog Technologies uses anonymized telecom user data, uses base station positioning algorithms, and incorporate with Big Data, Artificial Intelligence (AI), and Machine Learning, we successfully developed the Mobility Intelligence™ solution, which provides telecom operators with a complete picture of mobile phone users.
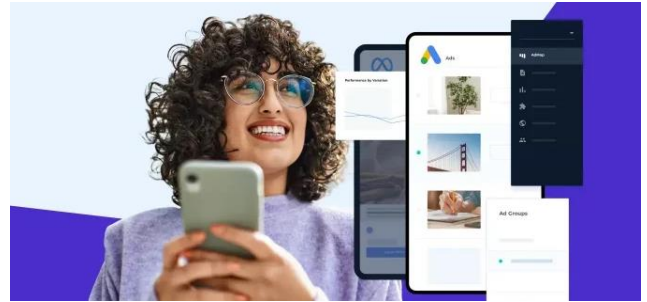
Transforming rich telecom data assets into new economic business opportunities also allows brand owners and advertisers to use telecom data to carry out customer analysis, marketing planning, digital advertising and other marketing and promotion work.

Mobility Intelligence™ (hereinafter referred to as MI) is mainly divided into two sub-products:

I. **Mobile Intelligence Data Analysis Platform (MI-DMP™)**

    MI-DMP™ helps telecom operators diversify the applications and monetize data. The data sources include users' online and offline behaviors, combined with interpersonal communication records and offline transaction information, and converted into mobile user behavior patterns and business wisdom. It helps telecom operators to provide better services and quality. MI-DMP™ uses a variety of algorithms such as exclusive patented deep learning and topology analysis to analyze and predict the behavior patterns of subscribers in all locations, so that the subscriber's profile can be comprehensively and specifically analyzed so as to reach a scale that only telecom operators can achieve. We work with leading brands in digital technology to provide innovative end-to-end solutions for telecom operators.

II. **Mobile Intelligent Real-time Bidding Platform (MI-DSP™)**

    MI-DSP™ combines de-personalized encryption technology and uses massive telecom data to support real-time bidding advertising services while ensuring the security of user data and privacy, allowing telecom operators to use the most advanced technology to launch programmatic advertising services to marketers and advertisers, allowing telecom operators to quickly occupy a place in the advertising industry.
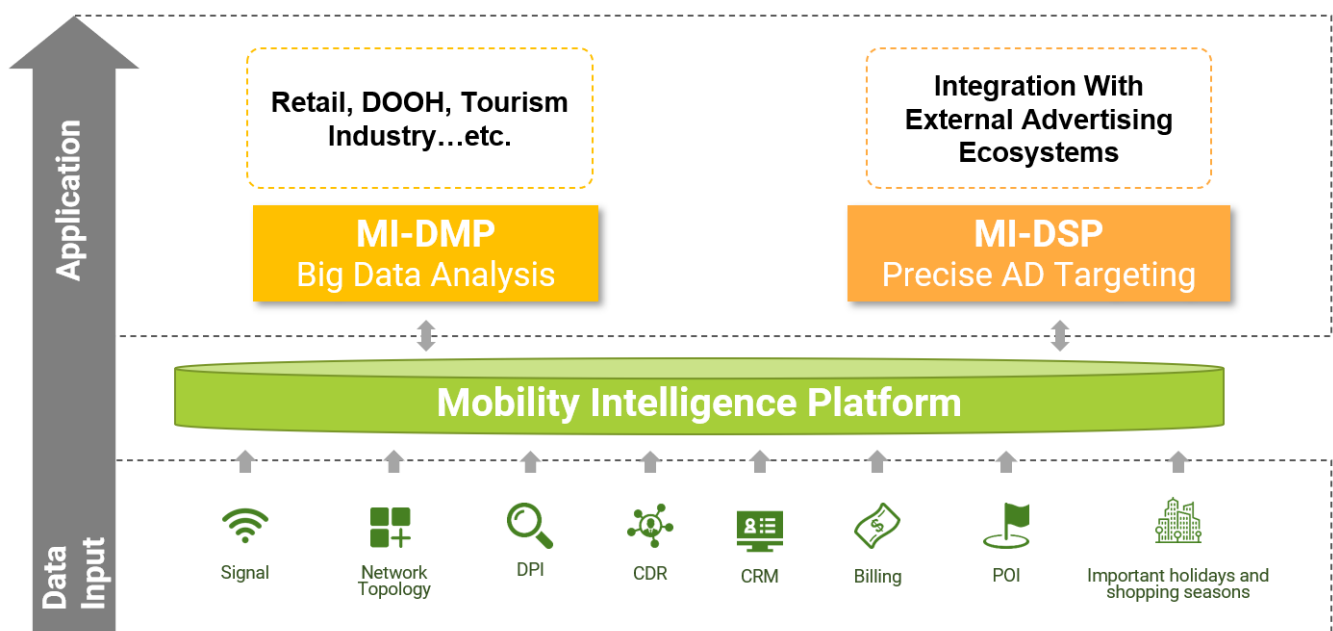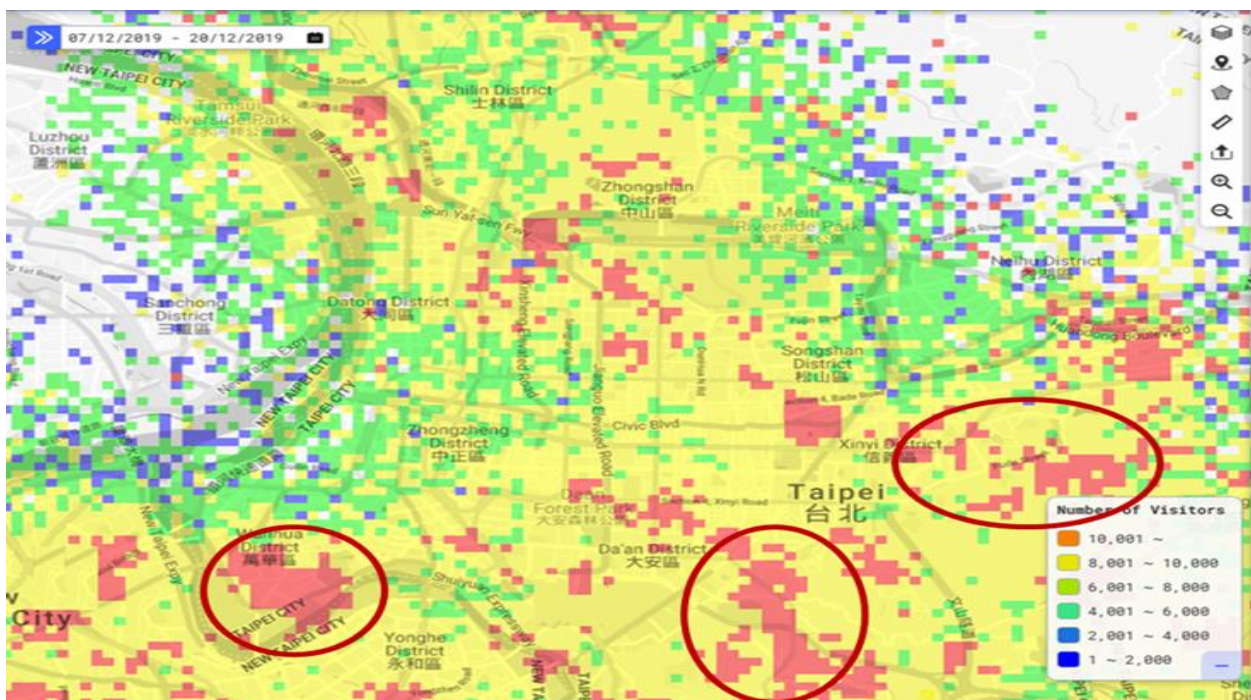
RealMotion™

The movement behavior of the crowd has an important impact on urban planning and even epidemic control. Groundhog Technologies uses its self-developed geo-positioning technology to successfully develop the value-added application product RealMotion™.

During the COVID-19 epidemic, our team successfully used telecom big data with its precise positioning technology to provide mobility analysis of virus infected persons and contacts, assist in contact tracing management operations, and effectively help government and private epidemic prevention work aids agencies, public health experts and researchers in controlling the spread of the coronavirus (COVID-19), and taking the social responsibility and being a good citizen.

In addition, the company also uses precise geolocation technology to assist in the construction of smart cities in Saudi Arabia, infrastructure planning for the UAE World Expo, World Cup football matches, and pilgrimage flow planning in Mecca, etc. By analyzing local telecommunications signaling with the aids of big data and AI prediction, it can assist the local government in planning public transportation routes and bus schedules before and after the event, and can monitor the flow of people in each district in real time during the event. The system platform will automatically send out a warning to notify the local police force when there is too much flow of people, helping to reduce stampedes events, improving life qualities, and maintaining citizens safety.

RealMotion™ is capable of analyzing population density in specific
areas, assisting in identifying high-risk locations during the pandemic.

Fraud has become a major global issue, with profound impacts on economies, businesses, and individuals. As technology evolves, fraudsters continually exploit new vulnerabilities, leading to financial losses, reputational damage, and a growing crisis of public trust. The severity of this issue extends further to include illicit financial flows, market instability, and challenges to the rule of law.

RealMotion ™ is capable of identifying phone numbers that appear repeatedly within known fraud hotspot areas. By cross-referencing devices that were once present in those locations but later left, the system can help pinpoint potential suspects linked to fraudulent activities. Additionally, Real™ can map driver movement patterns to determine overlaps with known criminal routes—providing actionable intelligence that supports investigations.

Financial Results

The revenues in the past two years by locations are as follows:

	Year	2023		2024	
Area		**Value**	**Ratio**	**Value**	**Ratio**
	Taiwan	27,243	7.34	33,023	8.39
	Europe	19,450	5.24	12,594	3.2
	Asia	281,069	75.72	267,710	67.99
Overseas	America	4,625	1.25	2,476	0.63
	Oceania	4,625	10.45	27,533	6.99
	Africa	-	0.00	50,442	12.81
	Others	-	0.00	-	0.00
	Total	343,945	92.66	360,755	91.61
	Grand Total	371,188	100.00	393,778	100.00
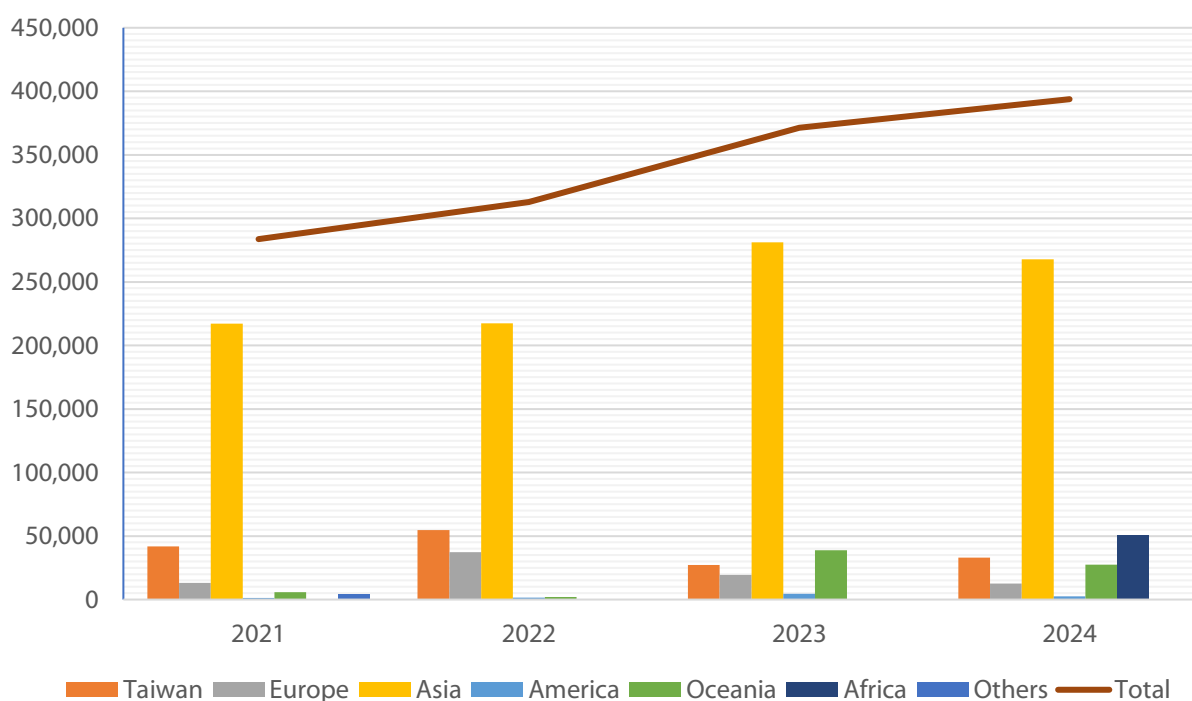
Unit: Thousands NTD (New Taiwan Dollars); %

Customer Service

Groundhog Technologies serves exclusively enterprise clients, each supported by dedicated business and project managers to ensure timely and expert responses to all product-related inquiries.

We also maintain open communication through our official website, where clients can submit feedback or requests. These are promptly handled by the appropriate internal teams. Our flagship products have consistently been delivered on time—demonstrating our commitment to operational reliability and client trust.

Sustainability

Through a robust governance framework, we monitor our ESG performance and uphold our sustainability commitments, ensuring that every employee's actions align with our vision of becoming a global leader in building a sustainable world.

Sustainability Vision →

Ambition and Blueprint →

ESG Enhancement Units →

Materiality Assessment →

Material Topic Boundaries →

Stakeholders' Engagement →

Sustainability Vision

Since the establishment of Groundhog Technologies, with the development of global wireless communication technology, all the way up to the evolution of 5G technology, we have also continuously deepened core technologies, towards the vision of "creating high-efficiency wireless communication network application value with positioning technology" go ahead. In our continuous pursuit of self-improvement and growth, we deeply understand that in addition to solidifying market competitiveness through technological development, it is essential to cooperate with both internal and external stakeholders such as employees and customers for sustainable operations.

Enterprises should not only strive for revenue maximization but also contribute to sustainability in environmental, social, and economic aspects. In the process of creating value for the company, we aim to balance and manage risks among stakeholders like employees and customers. Internally, we foster a friendly workplace environment, value employee rights, and support their self-worth and physical and mental development, hoping that the company and employees can motivate and grow together. Externally, we actively communicate with customers to fully understand market and customer demands.

To review, adjust and review our corporate commitments. We plan a sustainable operating model that takes into account the environment (E, Environment), society (S, Social), and governance (G, Governance), and gradually implement corporate social responsibilities. We also use telecommunications data analysis and precise positioning technology to help customers optimizing their mobile network to get more efficiency and consume less energy. We look forward to creating contributions and value for all stakeholders through sustainable development during road layout and optimization.

Ambition and Blueprint

In order to accomplish the determination of sustainable operation and development, Groundhog Technologies has formulated a sustainable blueprint to ensure that the development of all aspects of ESG are consistent with the company's sustainable philosophy, and has set goals to track and review the implementation of corporate social responsibility.

Perspective	Short-term goals (before the end of 2025)	Medium-term goals (from 2026 to 2028)	Long-term goals (after 2029)
Environmental	Improve the company's colleagues' awareness of environmental protection	Improve suppliers' awareness of environmental protection	Reduce electricity consumption per unit of revenue by 1% compared with the previous year
	Use energy-saving equipment when replacing old equipment	Maintain a high rate of local procurement	Continue to increase the local procurement rate
Social	Increase the proportion of internal training for employees	Strengthen international talent training	Increase the proportion of external training for employees
	Continue to participate in charity-related associations	Continue to improve the retention rate of existing employees	Continue to improve the retention rate of new employees
Governance	Strengthen communication with stakeholders	Improving the diversity of the Board of Directors	Continuously improving customer stickiness and stable overall profit growth
	Strengthen the publicity of insider equity laws	Improve employees' awareness of legal compliance	Continue to improve the diversity of directors
	Increase the revenue contribution of existing customers and continue to add new customers	Continue to strengthen information transparency	Implement the brand review mechanism to achieve responsible marketing

ESG Enhancement Units

In response to the increasingly severe global climate change, and to mitigate risks while fulfilling corporate social responsibility, we formulated the "Corporate Sustainable Development Promotion Guidelines" on December 30, 2022. We also established a ESG Enhancement Units composed of various departments to jointly promote related matters. The general manager ensures the implementation of corporate social responsibility and regularly reviews and revises the plans. The ESG Promotion Units report the execution status of sustainable development work to the Board of Directors annually. The board listens to the management's report on the company's operations and sustainable development execution. The management presents the company's planned strategies to the board, which assesses the feasibility of the strategies and provides recommendations to the management as necessary.

Since the establishment, in addition to focusing on core business, the management has diligently established ESG management system. The system ensures that company employees and suppliers adhere to the standards set forth and continuously track and improve compliance. We maintain good interactions with stakeholders, including shareholders, employees, customers, suppliers, the government, and society with fair treatment. The company aspires not only to fulfill its responsibility as a global citizen but also to firmly implement the concept of sustainable operation.

The ESG Promotion Units is convened by the general manager, with representatives from various departments including human resources, administrative management, research and development, and business units. They hold regular meetings to promote related activities. To ensure the smooth operation of the promotion team, the general manager regularly reports significant sustainability topics and improvements to the Board of Directors.

The organization chart and responsibilities of the ESG Enhancement Units are as follows:

ESG Enhancement Units

Sustainable management
- Corporate governance
- Integrity management
- Risk control
- Law compliance and internal control

General Manager's Office
Administrative Division

Business commitment
- Quality management
- Customer service
- Sustainable Research & Development

Business Operations Division
Research & Development Division
Mobile Intelligence Division

Employee care
- Staff caring
- Employee relations
- Professional training
- Welfare Benefits

Human Resources Division

Environmental sustainability
- Energy saving & carbon reduction
- Resource recycling
- Environmental sustainability

Administrative Division

Materiality Assessment

Groundhog Technologies defines stakeholders as internal or external individuals or groups that have a direct or indirect impact on, or are impacted by, the company's operations, products, and services. Based on this definition, we have identified seven key stakeholder groups: employees, shareholders/investors, media, non-profit organizations (NPOs), suppliers, customers, and government agencies.

Linking Stakeholders to Material Topics

By analyzing stakeholder responses via surveys, we assess both the impact and level of concern related to sustainability issues. This helps identify shared priorities between the company and its stakeholders, serving as the basis for our sustainability reporting. After validation by the Sustainability Committee, relevant strategies, disclosures, and actions are outlined in the overview tables at the beginning of each chapter.

The materiality assessment consists of three steps: identification, data collection and prioritization, and confirmation. A full analysis is conducted biennially. If a significant issue emerges in a non-assessment year, the process will be activated to ensure a timely response.

Step 1: Topic Identification

Drawing from GRI Standards, SASB, internal goals, and stakeholder input, the Sustainability Committee identified 20 sustainability topics: 9 governance, 5 environmental, and 6 social issues.

Aspects	Sustainability Issues
Governance	1. Innovative R&D 2. Economic Performance 3. Corporate Governance 4. Risk Management 5. Information Security & Privacy 6. Legal Compliance 7. Supplier Management 8. Business Continuity Management 9. Product Safety & Quality
Environmental	10. Climate Change 11. Energy Management 12. Air Pollution Management 13. Water Resource Management 14. Waste and Recycling
Social	15. Talent Attraction and Retention 16. Career Development 17. Customer Service 18. Diversity and Human Rights 19. Social Participation 20. Occupational Safety and Health

Step 2 : Prioritization and Analysis
In accordance with GRI 3: Material Topics 2021, we analyzed each topic's **impact** and **stakeholder concern**:

Impact Analysis: Employees rated the 20 topics based on positive/negative impact, opportunities, risks, and likelihood. Based on existing risk frameworks, seven high-impact topics were identified: Innovative R&D, Economic Performance, Corporate Governance, Risk Management, Product Quality & Safety, Career Development, and Customer Service.

* Please refer to the Topic List on the previous page
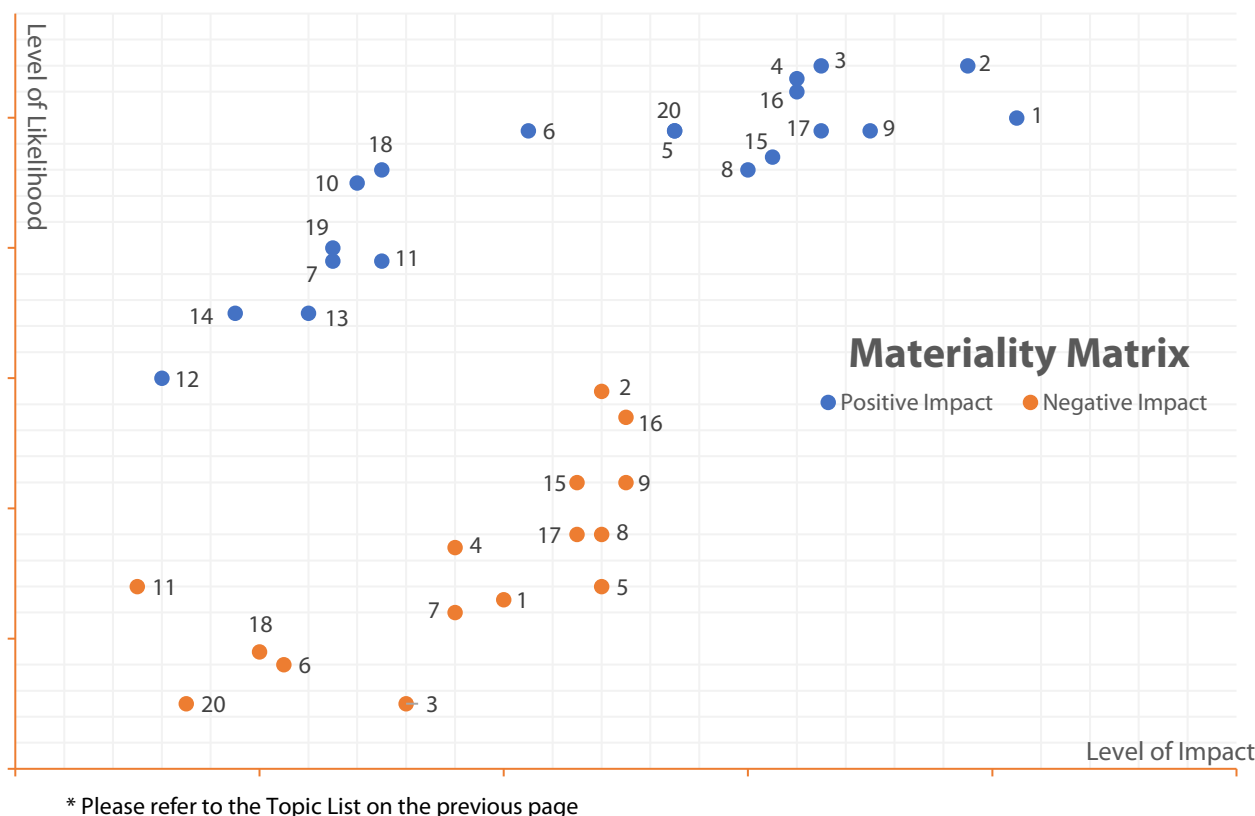
Concern Analysis: External stakeholders evaluated concern levels via an online survey. The top five concerns were: Legal Compliance, Product Quality & Safety, Information Security & Privacy, Innovative R&D, and Talent Attraction & Retention.

Step 3：Topic Confirmation

Based on the combined analysis, similar topics were merged to form 10 final material topics, which were reviewed and confirmed by the Sustainability Committee.

Material Topic Boundaries

Following the identification of material topics, cross-functional ESG working groups further evaluated the completeness of each topic—assessing their internal and external impact boundaries, and mapping them to relevant GRI specific topics and SASB standards. Management approaches and governance mechanisms for each topic are summarized at the beginning of the respective chapters in this report.

Material Topic	GRI / SASB Related	Section Disclosed	Impact Boundary
Risk Analysis			
1. Innovative R&D	TC-SI-520a.1	**Intellectual Property Management**	Direct: Investors, Supplier, Customer, Government Indirect: NPOs
⚠ Lack of innovation may result in technological lag, lower customer satisfaction, increased data security risks, and potential legal disputes.			

Material Topic	GRI / SASB Related	Section Disclosed	Impact Boundary
Risk Analysis			
2. Economic Performance	**GRI 201**	**About Groundhog**	Direct: Employees, Customer, Government Indirect: Investors
⚠ Low operational efficiency or poor management may increase costs, reduce revenue, and weaken market competitiveness.			
3. Corporate Governance	**GRI 2-17** **GRI 2-18**	**Governance**	Direct: Investors Indirect: Employees, Customer, Government
⚠ Ineffective corporate governance may cause internal disorder, poor decision-making, and higher financial risks, harming long-term growth.			
4. Risk Management	**GRI 201-2**	**Risk Management**	Direct: Employees, Investors, Supplier, Government Indirect: NPOs, Customer
⚠ Poor risk management may lead to order loss, reputational damage, legal liabilities, and operational instability.			
5.Information Security & Privacy	**TC-SI-230a.1**	**Information Security**	Direct: Employees, Investors, Supplier, Customer, Government Indirect: NPOs, Customer
⚠ Data breaches, cyberattacks, or malware infections may cause financial loss, brand damage, and reduced customer trust.			
6. Legal Compliance	**GRI 2-27**	**Social Responsibility and Legal Compliance**	Direct: Investors Indirect: Government
⚠ Non-compliance with regulations may result in fines, lawsuits, business disruption, and reputational harm.			
9. Product Safety & Quality	**GRI 416**	**Product Safety**	Direct: Customer, Government Indirect: Investors, NPOs
⚠ Poor product quality may disrupt customer operations, cause order loss, and damage corporate reputation.			
15.Talent Attraction and Retention	**GRI 414-2**	**Employee Benefits**	Direct: Employees Indirect: Investors, NPOs
⚠ An unfavorable workplace environment may hinder talent attraction and long-term development.			
16. Career Development	**GRI 404-1**	**Talent Development and Training**	Direct: Employees Indirect: Investors, NPOs
⚠ Lack of career development systems may reduce talent retention and negatively impact operations.			
17. Customer Services	**GRI 2-6**	**Customer Service**	Direct: Customer Indirect: Employees, Investors
⚠ Poor relationship management may reduce customer loyalty, cause order loss, and weaken market position and revenue.			

Stakeholders' Engagement

The Company maintains a "**Stakeholder Section**" and a "**Sustainability Section**" on our official website. The former allows stakeholders to find appropriate contact points or submit feedback to the Audit Committee via email. The latter provides detailed disclosures of our sustainability policies and implementation progress, ensuring stakeholders stay informed of our commitments and developments. Tailored communication channels are established for each stakeholder group, specifying response mechanisms, communication frequency, and responsible contacts — ensuring meaningful dialogue and responsiveness to stakeholder concerns.

This ESG report serves as one of our key stakeholder communication tools. Additionally, through our bilingual website, email, telephone, and fax, domestic and international stakeholders can access up-to-date company information and directly reach responsible personnel for specific concerns. This section outlines the key concerns of each stakeholder group, our corresponding response strategies, the frequency of engagement, and relevant contact information.

Role	Relationship	Issues Concerned	Respond Channels
Customer	Customers are key partners, and we deliver tailored services.	Business Integrity Legal Compliance Risk Management Innovative R&D Information Security & Privacy	Phone / Fax E-mail Sales Meeting Our Website
Supplier	The driving force behind our daily operations.	Information Security & Privacy Legal Compliance Supplier Management Career Development	Phone / Fax E-mail Our Website
NPOs	We give back through donations and community engagement.	Innovative R&D Legal Compliance Product Safety & Quality	Phone / Fax E-mail Our Website
Investors	Shareholder and investor support drive stable growth.	Information Security & Privacy Product Safety & Quality Customer Services	Shareholders Meeting Investor Forum Our Website MOPS
Press	Public attention fuels our continuous improvement.	Information Security & Privacy Innovative R&D Legal Compliance Career Development Talent Attraction and Retention	Phone / Fax E-mail Our Website
Employees	Our services build on proven technology with constant innovation.	Information Security & Privacy Occupational Safety and Health Legal Compliance	Labor Management Meeting Monthly Meeting Anonymous Mail Box
Government	As a listed company, Groundhog complies with regulations.	Corporate Governance Legal Compliance Innovative R&D Diversity and Human Rights	Regular Declaration Order Issuing Official Document Promotional Meeting

Governance

Integrity lies at the heart of Groundhog Technologies. We strengthen board functions and risk management through sound governance, regulatory compliance, and transparent operations - paving the way for responsible and sustainable growth.

Governance Structure →

Board, Committee Functions and Audit →

Business Integrity →

Information Security →

Risk Management →

Intellectual Property Management →

Supplier Management →

Material Topics Overview

Material Topic :	1. Innovative R&D
Significance	Drive technological innovation and R&D to enhance product competitiveness and respond to market needs and technological shifts
Commitment	• Aim to be the best sustainable partner for clients • Proactively develop next-generation energy-saving solutions • Support clients in sustainable data utilization and management
Strategy & Actions	Invest in R&D and file patents to boost product and service competitiveness and drive revenue
Performance Goals	• Continuously innovate and commercialize new technologies • Expand patent portfolio, build a resilient supply chain & ecosystem thru innovation • Patent filing, innovation tracking, R&D investments
Responsible Unit	R&D Division, Legal Affairs

Material Topic :	3. Corporate Governance
Significance	Establish sound governance mechanisms to enhance operational transparency, stakeholder trust, and corporate accountability
Commitment	• Conduct regular board performance evaluations • Ensure board diversity and independent decision-making
Strategy & Actions	• Establish Audit Committee and Compensation Committee • Appoint a Corporate Governance Officer • Regularly monitor corporate governance regulations
Performance Goals	The Board of Directors serves as the highest decision-making body, overseeing company operations and policy implementation
Responsible Unit	Administrative Division, Internal Audit, General Manager Office, ESG enhancement Unit

Material Topic :	4. Risk Management
Significance	Establish a comprehensive risk identification and control mechanism to reduce operational disruptions and protect intellectual property
Commitment	Leverage internal audit plans, risk management frameworks, and control measures to mitigate impacts on operations and safeguard shareholder and employee interests
Strategy & Actions	• Expand new technologies to mitigate risks • Implement procedures to protect intellectual property and patent assets
Performance Goals	• Identify risks and develop response measures • Conduct internal and external audits annually • Continuously track and improve audit findings
Responsible Unit	Internal Audit, ESG enhancement Unit

Material Topic :	5. Information Security & Privacy
Significance	Strengthen information security and privacy protection through secure design to ensure operational stability and market trust
Commitment	Establish information security regulations and operational procedures; conduct regular crisis drills and enhance employee training to reinforce cybersecurity defense
Strategy & Actions	Designate a dedicated team to plan information security policies and training; perform regular annual audits
Performance Goals	Zero incidents of financial loss due to information security breaches
Responsible Unit	Information Security Team

Material Topic :	6. Legal Compliance
Significance	Ensure full compliance with laws and regulations to reduce legal risks and strengthen compliant operations and corporate sustainability
Commitment	Monitor regulatory changes in real time, foster a culture of compliance, and develop proactive response measures to ensure lawful, ongoing operations
Strategy & Actions	Comply with all applicable laws; establish mechanisms for legal tracking and procedures for handling regulatory matters
Performance Goals	Zero major legal violations
Responsible Unit	Legal Affairs, Human Resources, General Manager Office

Material Topic :	9. Product Quality & Safety
Significance	Continuously improve product quality and safety standards to enhance customer satisfaction, brand trust, and market competitiveness
Commitment	Deliver high-quality software products with software safety as the top priority
Strategy & Actions	Conduct quality inspections before, during, and after software delivery, as well as during customer use, to ensure optimal product performance and implementation of software security
Performance Goals	Zero incidents of total data center outages caused by product quality issues
Responsible Unit	R&D Division

Performance Highlights

1. No incidents of bribery, corruption, or regulatory penalties occurred during the reporting year.

2. Zero information security breaches, customer data leaks, or fines were reported. No complaints were received from third parties or authorities regarding data protection violations.

3. No operational disruptions occurred during the reporting period.

Governance Structure

Our company, in accordance with the "Sustainable Development Practices Principles," has established an ESG Enhancement Unit composed of cross-departmental personals. It promotes related matters with the joint efforts of various departments, and the general manager ensures the implementation of corporate social responsibility. Regular reviews and plan adjustments are conducted.

Corporate governance affairs are led and coordinated by the corporate governance officer, with each department responsible for their respective duties: the financial and accounting department handles the operations of the Board of Directors, audit committee, and compensation committee; the investor relations department manages the operations of shareholder meetings; the general manager office oversees and executes the company's integrity management and corporate social responsibility.

Board, Committee Functions and Audit

Board Diversity and Independence

Board Diversity

The company has established a "Corporate Governance Code," which stipulates that the composition of the Board of Directors should consider diversity. Based on its own operations, business model, and development needs, the company should formulate appropriate diversity policies.

These policies should include, but are not limited to, basic criteria and values (such as gender, age, nationality, and culture) as well as professional expertise and skills (such as law, accounting, industry, finance, marketing, or technology). Board members should generally possess the necessary knowledge, skills, and qualities required to perform their duties.

To achieve the ideal goals of corporate governance, the Board of Directors should collectively possess the following capabilities:

I. Operational judgment
II. Accounting and financial analysis
III. Management skills
IV. Crisis management
V. Industry knowledge
VI. International market perspective
VII. Leadership
VIII. Decision-making skills

Composition of the Board Members

The second term board of members of Groundhog Technologies consists of seven directors, all of whom have diverse professional backgrounds in both industry and academia. They have expertise in various fields such as operational management, leadership and decision-making, industry knowledge, and financial sectors, providing professional opinions from different perspectives. This significantly enhances the company's operational performance and management efficiency. In terms of age, two directors are between 71-80 years old, four are between 61-70 years old, and one is between 41-50 years old. The board has a wide age distribution, balancing experience and execution capabilities.

For details on the implementation of board diversity, please refer to the table below:

Diversity / Directors	Composition							Capabilities							
Elements					Age										
	Nationality	Gender	Serving as company officers	Below 51	Between 51 and 60	Between 61 and 70	71 and above	Operational judgment	Accounting and financial analysis	Management skills	Crisis management	Industry knowledge	International market perspective	Leadership	Decision making
David Chiou	Taiwan	Male	✓	✓				✓		✓	✓	✓	✓	✓	✓
Horng, Jyh-Feng	Taiwan	Male				✓		✓	✓	✓	✓	✓	✓	✓	✓
Liu, Chiann *	Taiwan	Female					✓	✓		✓	✓	✓	✓	✓	✓
Ho Chen, Tan	Taiwan	Male					✓	✓		✓	✓	✓	✓	✓	✓
Tseng, Chin- Lung	Taiwan	Male					✓	✓	✓	✓	✓	✓	✓	✓	✓
Tseng, Tsung- Lin	Taiwan	Male				✓		✓	✓	✓	✓	✓	✓	✓	✓
Lin, Yi-Bing	Taiwan	Male				✓		✓		✓	✓	✓	✓	✓	✓

* To enhance gender diversity on the Board, a female director was elected in a by-election at Shareholders' meeting on June 24, 2024.

Based on the Board of Directors' operations, business model, and development needs, the company has formulated the following goals to achieve greater board diversity and strengthen corporate governance. As of the submission date of this report, the progress is as follows:

Management Goals	Status
Directors concurrently serving as company officers not exceed one-third of the total number of the board members	✅
Board of directors contains at least one director of different genders	✅

Groundhog Technologies places great emphasis on gender diversity in the composition of its Board of Directors. A female director has been elected at the 2024 Annual Shareholders' Meeting to achieve the goal of board diversity management.

Board Independence

The Company's current Board of Directors consists of seven members, including four independent directors, accounting for 57.1%. One director concurrently serves as both Chairman and President, representing 14.3%. All independent directors meet the independence requirements set forth in the "Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies." Furthermore, our "Rules and Procedures of Board of Directors Meetings" includes a director interest avoidance system. For proposals listed by the Board of Directors, if there is a conflict of interest with a director or the legal entity they represent, and it may harm the company's interests, the concerned director can express opinions and answer questions but must not participate in the discussion and voting. They should also recuse themselves from the discussion and voting and cannot act as a proxy for other directors to exercise their voting rights.

Functional Committee and Internal Audit

Audit Committee

The Audit Committee is established to assist the Board of Directors in overseeing the quality and integrity of the company's accounting, auditing, financial reporting processes, and financial controls. This committee is composed entirely of independent directors, with a minimum of three members, one of whom serves as the convener. At least one member must possess expertise in accounting or finance. The audit committee meets at least once per quarter. In 2024, the committee held a total of 5 meetings, with an average attendance rate of 100%.

Remuneration Committee

The purpose of the Remuneration Committee is to assist the Board of Directors in implementing and evaluating the company's overall remuneration and benefit policies, as well as the remuneration of directors and managers. The members of this committee are appointed by resolution of the Board of Directors, and the number shall not be less than three. This committee should have at least one independent director participating, and all members should elect an independent director to serve as the convener and chairman of the meeting. The Salary and Remuneration Committee was established on August 4, 2022, and held 3 meetings in 2024. The average attendance rate was 100%.

Internal Audit

The Company's internal control system is established in accordance with the "Regulations Governing the Establishment of Internal Control Systems by Public Companies" and designed by management with Board approval, considering overall operations. The internal audit unit reviews the system's appropriateness and operational effectiveness under the "Implementation Rules of Internal Audit," conducting ongoing and project-based audits covering all company operations and subsidiaries. Annual audit plans are based on risk assessments and executed upon Board approval.

Monthly audit reports are reviewed by the Audit Committee, with deficiencies tracked until resolved. The internal audit head reports quarterly to the Committee. In 2024, no material internal control deficiencies were found. The Company also conducts an annual self-assessment, reviewed by internal audit, which informs the Chairman and President in evaluating overall effectiveness and issuing the Internal Control System Statement. The company's internal control system includes the transaction management of related parties, the supervision and management of subsidiaries, the management of discussion matters about Board of Directors, audit committee, and salary and remuneration committee. The Internal Audit Division arranges audits each year and report to the Audit Committee and Board of Directors.

Board Operations Enhancement

To achieve effective governance, improve the company's operational efficiency, reduce risks, and protect the interests of stakeholders, our directors participate in corporate governance and professional knowledge related courses each year and obtain certifications. This helps board members continuously update industry knowledge, understand trends, and adopt best practices. The training covers topics such as corporate law, financial reporting standards, risk management, and strategic planning to help directors perform their duties more efficiently. Additionally, the company has purchased liability insurance for all directors.

Below is the training status of board members during the reporting year:

Title	Name	Date	Organizer	Course name	Hours
Chairman	David Chiou	2024.06.03	Securities and Futures Institute (SFI Taiwan)	Institutional Investor Perspectives Forum	3
Director	Horng, Jyh-Feng	2024.08.07	Accounting Research and Development Foundation	Corporate ESG: Environmental, Social, and Governance – Legal Responsibilities and Case Law Analysis	3
		2024.11.06	Accounting Research and Development Foundation	Legal Liabilities of Directors and Supervisors	3
Director	Liu, Chiann	2024.06.03	Securities and Futures Institute (SFI Taiwan)	Institutional Investor Perspectives Forum	3
Independent director	Ho Chen, Tan	2024.04.17	Securities and Futures Institute (SFI Taiwan)	Corporate Governance and Securities Regulations	3
		2024.07.18	Securities and Futures Institute (SFI Taiwan)	2030/2050 Green Industrial Revolution	3
Independent director	Tseng, Chin- Lung	2024.08.23	Taiwan Corporate Governance Association	Preventing Labor Disputes and Enhancing Corporate Governance	3
		2024.09.06	Taiwan Corporate Governance Association	Strategic Considerations for Corporate Group Restructuring	3
Independent director	Tseng, Tsung- Lin	2024.09.05	Securities and Futures Institute (SFI Taiwan)	2024 Second-Half Business Outlook – Latest Taiwan PMI/NMI Status, Strategies, and Challenges	3
		2024.11.30	Accounting Research and Development Foundation	Strengthening Competitiveness through ESG Sustainability Strategies	3
Independent director	Lin, Yi-Bing	2024.08.13	Taiwan Corporate Governance Association	Achieving a Win-Win-Win in Corporate Digital Transformation: Intelligence, Security, and Risk Management	3
		2024.09.06	Taiwan Corporate Governance Association	Strategic Considerations for Corporate Group Restructuring	3

The Company Board passed the "Rules for Performance Evaluation of Board of Directors" at the meeting on December 27, 2022. Annual performance evaluations are conducted for the members of board, audit committee, and Salary and Remuneration Committee. According to Article 9 of the aforementioned method, the evaluation results are reported to Salary and Remuneration Committee and Board of Directors, and are used as a reference for individual directors' compensation and reappointment nominations.

Period	Target	Method	Assessments
2024.01.01 To 2024.12.31	Individual Board members	Director self-assessment	Performance evaluation for each board members: 1. Comprehension of the Company's targets and missions 2. Awareness of the director's duties 3. Level of participation in the Company's operations 4. Management and communication of internal relations 5. Professionalism and continuing education of the director 6. Internal control
	Board of Directors	Board of Directors internal self-assessment	Performance evaluation for Board of Directors: 1. Level of participation in the Company's operations 2. Quality of decisions made by the board of directors 3. Composition of the Board of Directors 4. Election and continuing education of directors 5. Internal control
	Functional committees	Functional committee internal self-assessment	Performance evaluation for functional committees (include audit committee & remuneration committee): 1. Level of participation in the Company's operations 2. Awareness of the functional committee's duties 3. Quality of decisions made by the functional Committee 4. Composition of the functional committee and selection of committee members 5. Internal control

Overall, the directors highly agreed with the operation of various evaluation indicators. The evaluation indicated that the overall operation of the board and each functional committee was good, meeting corporate governance requirements, effectively enhancing board functions, and protecting shareholders' rights.

Business Integrity

To strengthen a culture of ethical business conduct, Groundhog Technologies has adopted a "Code of Ethical Conduct" and a "Code of Integrity," both approved by the Board of Directors. All employees are required to understand and comply with the company's integrity policies. The company's "Work Rules" clearly state that all employees must uphold honesty and avoid misconduct such as accepting bribes, inappropriate hospitality, illicit benefits, unverified assets, improper exchanges of interests, or kickbacks.

Before entering external business relationships, we assess the counterparty's legal compliance, ethical policies, and any record of misconduct or litigation. All contracts include clauses on confidentiality and intellectual property protection.

ESG Enhancement Units, led by the CEO, is responsible for assisting the Board and management in promoting and monitoring the execution of ethical conduct policies. Progress is reported to the Board in Q4 each year.

The Code of Ethical Conduct outlines conflict-of-interest prevention policies, requiring employees to recuse themselves and proactively report any potential conflicts to their supervisor or the HR department.

Annual self-assessments of internal controls are conducted by all departments using standardized questionnaires. Results are reviewed by the audit team and serve as the basis for the Board's internal control effectiveness statement.

The company provides ethics training courses, including principles of professional integrity, trade secret protection, and insider trading regulations. In the most recent session, 20 employees participated in a total of 4 training hours.

Information Security

Protecting information security and confidential data is a core commitment Groundhog Technologies makes to our customers, partners, and investors. Strengthening cybersecurity resilience and management systems remains a top priority.

A dedicated information security team is in place to oversee strategic planning, risk assessment, technical improvement, and real-time monitoring. In the reporting year, team members completed 264 hours of external training and seminars, ensuring alignment with the latest cybersecurity practices and enhancing operational resilience.

Institutionalizing Cybersecurity Governance

Internal controls include procedures for the information system lifecycle, cybersecurity management guidelines, and incident response protocols. We also follow the TWSE's cybersecurity governance guidelines to establish a formal promotion structure.

Security measures address both managerial and technical controls, while employee awareness is strengthened through training and regular awareness campaigns. This embeds cybersecurity into daily operations and cultivates a security-first culture.

This year, 23 hours of training were conducted for new hires, supplemented by six types of self-study materials on cybersecurity awareness.

Reinforcing Cybersecurity Defense

Regular risk assessments identify threats to the confidentiality, integrity, and availability of core systems and business functions, leading to targeted security reinforcements.

We maintain strict physical access control to data centers, enhance server security, and restrict data access to authorized personnel with dedicated environments. Data input/output is tightly monitored to protect sensitive operations.

Minimizing Operational Risk

A business continuity plan (BCP) is in place for core operations, supported by periodic disaster recovery drills covering system backups, personnel roles, emergency procedures, and resource allocation.

Social engineering simulations were conducted to test staff readiness against emerging threats, reaching 152 participants across three physical security workshops. Two disaster recovery drills were held to validate our BCP effectiveness.

Results of Cybersecurity Measures

Our cybersecurity strategy centers on institutional control, proactive defense, and operational risk mitigation. In the reporting year, no major cybersecurity incidents, breaches, or regulatory violations were recorded, and all internal and external audits yielded zero findings.

No customer data protection complaints were filed by regulatory agencies or third parties, and no legal actions were initiated.

Risk Management

By establishing, implementing, and maintaining a proactive risk management framework, Groundhog Technologies continuously monitors internal and external issues and environmental changes. We conduct regular business impact analyses and enhance our adaptive capabilities to uphold operational continuity and protect stakeholder interests. Below are key identified risks and our corresponding strategies.

Environmental Protection and Resource Efficiency

As a non-manufacturing software company, we generate minimal environmental impact. Energy-saving practices include lights-off during lunch breaks, air conditioning set above 26°C in summer, and unplugging devices during extended holidays.

Other measures include individual AC controls for meeting rooms, office-wide recycling, the use of recycled paper, and the reuse of supplier packaging, all aimed at reducing our environmental footprint.

Climate Change Impact

While our business model does not produce pollutants or trigger regulatory risks, climate change may increase the difficulty of physical field testing for telecom clients. This creates an opportunity for our network optimization solutions to reduce clients' operational risks.

Workplace Safety and Employee Well-being

We are ISO 45001:2018 certified and comply with the Occupational Safety and Health Act. Our safety and hygiene protocols aim to create a secure and healthy work environment.

Preventive policies cover sexual harassment, ergonomic hazards, overwork-related illnesses, and unlawful acts against employees, safeguarding mental and physical well-being.

Benefits include group insurance, lactation rooms, periodic health checks, and on-site wellness programs. Nurses provide bi-monthly consultations, and doctors offer annual health analytics and advice. We promote work-life balance via flexible hours and remote work. Fire drills are conducted biannually, and building safety inspections are completed every two years.

As of December 2024, no occupational incidents occurred, demonstrating the effectiveness of our occupational safety protocols. Improvements will continue to ensure employee health and dignity.

Product Safety

We are certified under ISO 9001:2015 and ensure our products comply with all applicable marketing, labeling, privacy, and data protection standards.

Ethical conduct is guided by internal codes and operational procedures. We integrate privacy by design and comply with Taiwan's Personal Data Protection Act and the EU GDPR.

Social Responsibility and Legal Compliance

We uphold corporate social responsibility and labor rights while ensuring legal compliance through internal audits and timely policy updates. No legal or regulatory violations occurred in 2024.

We remain committed to enhancing compliance and creating sustainable value through transparency and stakeholder engagement.

Intellectual Property Management

Groundhog Technologies places strong emphasis on intellectual property (IP) management to protect R&D resources, sustain innovation, and enhance competitive advantage. By integrating IP strategies with business objectives, the company has implemented a comprehensive IP management plan to ensure effective portfolio development, risk mitigation, and long-term value creation.

Patents

Groundhog monitors industry patent approvals and market trends to guide its innovation strategy. Internally, employees are encouraged to propose inventive ideas through incentive mechanisms, data analysis, and project discussions, fostering a culture of innovation. R&D teams are required to document their development processes meticulously. The patent application process — from search and scope design, to drafting, filing strategies, office action responses, and appeals — is executed via standardized procedures, with support from professional patent firms. As of 2024, the company has been granted 39 patents, with an additional 3 applications under review.

Area	Patents Obtained	In Process Application
Taiwan	8	1
US	16	1
UK	4	0
EU	6	1
Others	5	0
Total	**39**	**3**

Trademarks

Recognizing that trademarks represent the value of products and services, Groundhog has established a structured trademark management system to protect brand identity. Trademarks are filed in alignment with business development needs. In 2024, three trademark applications were successfully approved.

Intellectual Property Protection

To safeguard trade secrets and confidential information, Groundhog has implemented strict protection measures. Confidentiality obligations are clearly stipulated in employment contracts. Physical access control is enforced through employee ID cards; visitors must register and be escorted at all times. Computers require individual login credentials, and access to pending or upcoming patent materials is restricted. These measures not only preserve the company's competitive edge but also uphold client interests and data security.

Regular Training and Education

Groundhog conducts internal training sessions and sends email communications to promote awareness of IP policies and trade secret regulations. Employees are required to complete an online assessment after participating in the training.

Implementation Review

The company has established an "Intellectual Property Management Policy" and reports its implementation status to the Board of Directors annually in Q4. In 2024, the following initiatives were carried out:

1. Annual review and inventory of granted patents
2. Four onboarding training sessions titled "Introduction to IP Rights and Management Framework"
3. Two newly granted patents, bringing the company's proprietary patent portfolio to 39, with 3 additional applications in progress.

Supplier Management

Groundhog Technologies is dedicated to advancing environmental sustainability by setting an example within our operations and extending these principles to our suppliers. We expect our suppliers to pursue growth while also considering their environmental impact and long-term sustainability.

We require suppliers to adopt environmentally friendly practices both within their facilities and throughout their logistics processes. This includes the use of recycled materials, reducing packaging, and minimizing the use of cardboard boxes. To formalize these expectations, Groundhog Technologies has established a Supplier Sustainability Management Policy. This policy mandates that suppliers continuously address important issues such as environmental protection, labor rights, occupational health and safety, and overall sustainable development.

For new suppliers, signing a Supplier ESG Commitment Letter and a Supplier Code of Conduct is required before beginning cooperation. For existing suppliers, we conduct annual evaluations through a Supplier ESG Self-Assessment Questionnaire, which helps us score their sustainability performance. Suppliers who receive poor evaluation results are provided with support and are required to implement corrective actions.

All suppliers, whether new or long-standing partners, must comply with sustainable business practices in areas such as occupational health and safety, labor and human rights, integrity in business dealings, environmental conservation, and social responsibility. Additionally, suppliers must adhere to all relevant laws and regulations to ensure alignment with Groundhog Technologies' commitment to sustainable and responsible supply chain management.

Environment

Groundhog is committed to transforming our company and industry in response to climate change. Rooted in technology, we reduce environmental impact and elevate stakeholder awareness through strategic partnerships - together moving toward a more sustainable future.
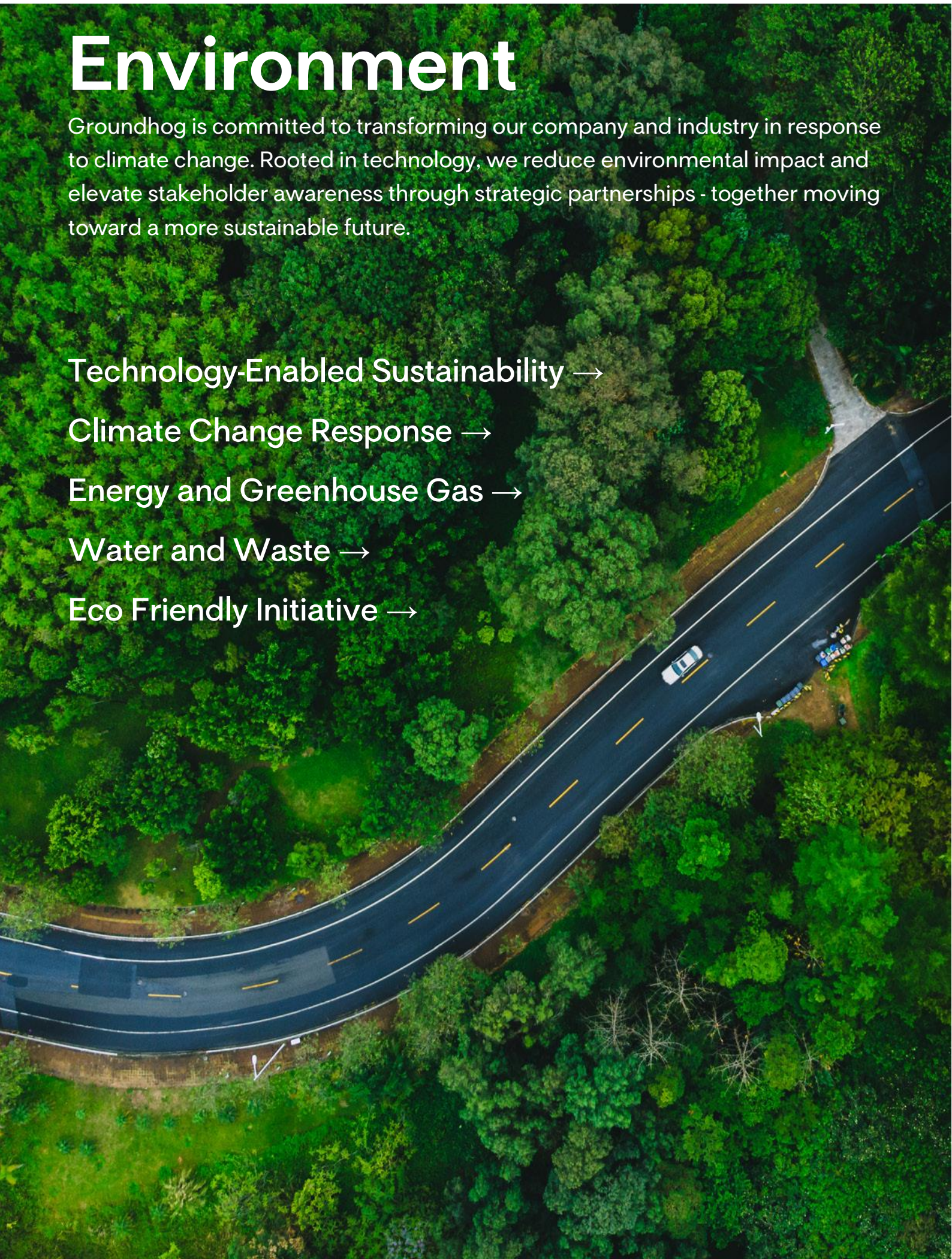
Technology-Enabled Sustainability →

Climate Change Response →

Energy and Greenhouse Gas →

Water and Waste →

Eco Friendly Initiative →

Technology-Enabled Sustainability

When telecom operators provide services across multiple technologies (e.g., 4G LTE, 5G NR), they face the challenge of balancing precise base station deployment to avoid coverage gaps while controlling costs. Groundhog Technologies' expertise in wireless technology and software development helps operators overcome differences in technology, terrain, and environment to achieve optimal network performance at the most efficient cost.

The installation and operation of base stations consume water, electricity, and fossil fuels, contributing to carbon emissions. Traditional methods such as drive tests and field tests to improve wireless coverage and RF module performance further increase carbon footprints.

Our software collects signaling trace logs from base stations within mobile networks and applies telecom expert-designed big data and AI analytics to assist operators in troubleshooting network issues and optimizing daily network maintenance. By optimizing base station configurations — through relocation, consolidation, or reduction—energy consumption and carbon emissions are effectively decreased.

To mitigate greenhouse effects and support clients' environmental responsibilities, Groundhog Technologies helps customers achieve energy saving, carbon reduction, and environmental protection goals through three key approaches:

Precise Deployment Planning

By analyzing base station traffic and coverage patterns, our system enables the strategic deployment of the minimum number of base stations required to ensure high-quality network performance. This optimized planning reduces the total number of deployed sites, helping telecom operators lower energy consumption and carbon emissions — contributing directly to environmental sustainability goals.

Once a base station is deployed, telecom providers must conduct validation tests to confirm performance before the site goes live. Traditionally, this involves road-based field testing by technical personnel. Groundhog Technologies offers an alternative: automated validation through passive data collection from nearby devices.

This approach offers multiple advantages:

1. **24/7 data collection**: far exceeding the data volume of manual drive tests.
2. **Broader geographic coverage**: including areas inaccessible by vehicles, beyond roadways.
3. **Lower operational and environmental costs**: significantly reducing manpower needs and eliminating the carbon emissions associated with drive testing.

Virtual Drive Test for Network Optimization

Traditionally, mobile network optimization has relied on dispatching engineers to perform on-site and drive tests using specialized equipment. These field tests are conducted to gather key performance indicators (KPIs) related to network coverage and quality, which are then used to guide optimization strategies.

The standard optimization process typically includes:

1. Data collection, analysis, and report generation
2. Setting KPI targets and corresponding strategies
3. Developing implementation plans and pre-deployment simulations
4. Deployment and real-time adjustment to achieve optimal network performance

Our solution offers a more sustainable alternative through features such as Minimization of Drive Test (MDT), Virtual Drive Test (VDT), Swap Feeder Detection. These functions allow remote data collection and analysis of network performance, reducing the need for personnel to conduct field tests. In doing so, our solution helps operators cut down on labor, equipment usage, and transportation—lowering both energy consumption and carbon emissions.

Intelligent Energy-Saving Support for Base Stations

Within mobile network operations, the Radio Access Network (RAN) accounts for a significant share of both power consumption and carbon emissions. Among RAN components, base stations are the primary contributors to energy usage and environmental impact.

As the global momentum toward net-zero emissions accelerates, mobile network operators and equipment providers are increasingly aligning their sustainability strategies with energy optimization at the RAN level— now a widely recognized and actively pursued priority.

Groundhog Technologies' software leverages big data analytics to monitor and interpret the real-time performance of mobile networks. By analyzing the distribution of user traffic and base station activity across the network, the system generates operational insights, such as traffic peaks and off-peak periods, for each base station.

Based on this intelligence, our solution enables intelligent energy-saving functions that dynamically adjust the radio frequency (RF) output of base stations. During low or zero traffic demand periods, the system can temporarily reduce or shut down RF modules, significantly lowering power consumption. When demand resumes, the system automatically reactivates the base station's RF signals to maintain service continuity and quality.

This intelligent power management function strikes a critical balance—achieving carbon and energy reduction while safeguarding the quality of network service. In doing so, it supports both environmental protection and operational excellence.

Climate Change Response

Faced with climate change and low-carbon energy-saving imperatives as key to corporate sustainability, Groundhog Technologies prioritizes developing products that help customers enhance hardware performance and achieve energy saving and carbon reduction. Climate change response is an integral part of our corporate sustainability efforts. The "Corporate Sustainability Promotion Committee" convenes relevant departments to identify climate risks and opportunities, analyze short-, medium-, and long-term risks, and evaluate their financial impacts. The Board of Directors is responsible for the practical oversight of climate risk and opportunity management. Management integrates scenario analyses, strategy formulation, and target achievements and reports to the Board.

Risks and Opportunities

Groundhog actively researches countermeasures to mitigate operational and financial impacts from climate change. Short-term is defined as 1-3 years, medium-term as 3-5 years, and long-term as over 5 years. We assess climate-related risks and their operational and financial impacts across these horizons and plan response strategies accordingly.

The identified short- term, medium- term, and long-term risks and opportunities are summarized as follows:

Aspects		Timeline	Impacts
Risk	Transitional	Mid-term	Shifts in customer needs and preferences; insufficient climate actions leading to reputational decline.
	Physical	Short-term	Increasing frequency of extreme weather patterns, heavy rainfall events, and large-scale flooding.
		Long-term	Rising average temperatures.
Climate Opportunities		Mid-term	Enhancing resource efficiency.
		Mid-term	Developing and innovating new low-carbon products and services.
		Long-term	Strengthening corporate reputation.

Based on the above analysis of climate-related risks and opportunities, we have identified three scenarios with higher likelihoods of occurrence to assess their potential impacts on business, strategy, and financial performance. The results are as follows:

Scenario 1: (Mid-term) Shifts in customer needs and preferences; development and innovation of new low-carbon products and services	
Aspects	**Impact**
Financial	Risk: Decline in market share. Opportunity: Increase in the sales share of low-carbon products, leading to higher revenue.
Strategical	Continue investing in R&D for next-generation low-carbon products and services while enhancing energy-saving and carbon-reduction benefits.
Business	Target telecom operators and related industries by highlighting how our products deliver energy efficiency, carbon reduction, and cost savings, thereby expanding market reach and capturing new business opportunities.

Scenario 2: (Mid-term) Insufficient climate actions leading to reputational decline	
Aspects	**Impact**
Financial	Risk: Stakeholders may be dissatisfied with the company's limited response to climate change, resulting in reputational damage and declining sales.
Strategical	By actively addressing climate-related events and rising online discussions, the company can strengthen its public image and gain customer recognition.
Business	Communicate externally that the company continues to develop energy-saving products, demonstrating concrete actions in response to climate change.

Scenario 3: (Long-term) Enhancing corporate reputation	
Aspects	**Impact**
Financial	Opportunity: Higher fundraising success rate and lower capital costs.
Strategical	Strengthen the company's green and sustainable image through transparent disclosure. Foster a corporate culture that values climate-related issues and takes concrete actions. Strive to improve corporate governance evaluations and establish a strong reputation.
Business	Highlight the green and sustainable attributes of our products to expand business opportunities.

Extreme Weather

Extreme weather events such as severe typhoons and major floods may cause power outages and transportation disruptions, affecting our operations, employee attendance, and data center functionality. While there is a risk of revenue loss, the likelihood and financial impact are minimal. The effects of rising average temperatures and sea levels on our office locations are also assessed as low.

Financial Impact of Transition Actions

Our products focus on helping customers save energy and reduce carbon emissions, with a low likelihood of being subject to carbon tax. Transition actions mainly involve carbon offsetting and the use of renewable energy certificates to reduce Scope 2 indirect emissions. Overall, the financial impact of these transition actions is limited.

Energy and Greenhouse Gas

Internal Organizational Energy Consumption

Groundhog Technologies' main business is the development and sale of software platforms and does not engage in manufacturing. Electricity consumption mainly consists of the company's share of the public electricity usage in the office building. All electricity (100%) is purchased from Taiwan Power Company's grid, and no renewable energy is currently used.

> Energy Management Goal →
> **1% reduction in unit revenue electricity consumption per year**

Despite this, we strive to reduce energy consumption and operating costs. To improve energy efficiency, the company promotes setting the air conditioning temperature at or above 26°C during summer, encourages departments to turn off unnecessary lights during lunch breaks, mandates shutting down personal computers outside of working hours to reduce standby power, promotes walking instead of using elevators, reminds employees to turn off lights, air conditioning, and screens after meetings, sets water dispensers to enter sleep mode during off-peak hours to save electricity, and equips each meeting room with an independent air conditioning controller to reduce energy waste.

Year	Power Usage	Usage per Revenue Unit*	YoY
2024	274,246 kWh	696.45 kWh	**-3.62%**
2023	268,217 kWh	722.59 kWh	

* Revenue Unit: 1 million NTD (New Taiwan Dollars)

In 2024, electricity consumption per NT$1 million revenue was 696.45 kWh, a decrease of 3.62% compared to 2023.

Greenhouse Gas Management

The Greenhouse Gas Protocol (GHG Protocol) defines scopes of greenhouse gas emissions as follows:

Scope 1: Direct emissions from sources owned or controlled by the company, such as combustion from boilers, furnaces, vehicles, or chemical processes in production equipment.

> Greenhouse Gas Management Goal →
> **1% reduction in Greenhouse Gas emissions intensity per year**

Scope 2: Indirect emissions from the consumption of purchased electricity, steam, heating, or cooling.

Scope 3: All other indirect emissions not included in Scope 2 that occur in the company's value chain, including upstream suppliers and downstream customers (e.g., raw material extraction and production, transportation of purchased fuels, and use of products or services sold). Emissions from leased assets, investments, and products partially or wholly owned or controlled by the company but outside organizational boundaries also fall under Scope 3.

As Groundhog's primary business involves software platform development and sales without manufacturing processes, there are no direct Scope 1 emissions. Scope 2 emissions are calculated based on electricity purchased from Taiwan Power Company and allocated by the building management center. Scope 3 emissions inventory began in 2024, including retrospective calculation for 2023. Detailed Scope 3 inventory can be found in the appendix. Below is our carbon emission inventory for the past 2 years:

Year	Scope 1 Emission	Scope 2 Emission*	Scope 3 Emission	Emission Intensity*	YoY
2024	0	129.99	7,048.49	18.24	**-3.13%**
2023	0	132.50	6,857.65	18.83	

* Based on the annual electricity emission factors announced by the Bureau of Energy, with the emission amount measured in metric tons of CO_2e. The Greenhouse Gas (GHG) emission intensity is expressed in tCO_2e/NT$1 million.

We promote energy-saving awareness among employees by encouraging use of public transportation or carpooling for domestic business trips and commuting. For international travel, we advise selecting hotels where walking, shared transport, or public transportation is feasible, and avoiding rental cars to reduce carbon emissions. The procurement of renewable energy, carbon credits, and related trading and offset mechanisms are under evaluation as tools for further greenhouse gas reduction.

In 2024, greenhouse gas emission intensity was 18.24 metric tons CO_2e per NT$1 million revenue, a 3.13% decrease from 2023.

Water and Waste

Water Resource Management

Cherishing water and protecting water resources is one of the important responsibilities of Groundhog. During the operation, the water source comes from the Taipei City Water Utility Department. We do not use groundwater or other sources. We only produce general domestic sewage without generating any business wastewater.

Water Management Goal →

1% reduction in water usage per capita per year

We continue to promote the concept of water conservation and turning off water to our employees. To achieve water management goals, here are what to do:

1. Promoting water conservation awareness and encouraging employees to turn off water taps after use.
2. Reminding employees to promptly report any damaged water supply equipment to the general affairs team, which then contacts maintenance vendors or the building management center to prevent water waste.
3. Conducting regular inspections and maintenance of drinking water dispensers, replacing filters as needed, and arranging prompt repairs when malfunctions occur to maintain water supply efficiency.

Year	Water Usage	Staff Count*	Usage per person*	YoY
2024	1207 kℓ	144	8.3819 kℓ	**-0.06%**
2023	1191 kℓ	142	8.3873 kℓ	

* Usage per person indicates yearly water consumption; staff count at the end of the year

In 2024, total water consumption increased compared to the previous year. The per capita water consumption was 8.3819 kiloliters, representing a 0.06% decrease from 2023.

Waste Management

Our office primarily generates general waste from daily operations, which is classified into general garbage (including food waste) and recyclables. Employees deposit their waste into designated sorting areas. The building management company's janitorial staff collects and consolidates waste from each floor, which is then transferred by certified waste disposal vendors to incineration facilities.

The building management center has a contract with a waste disposal provider to handle waste collection for the entire building. The agreement includes a fixed service package that allows for up to ±20% variation from a baseline of 7 metric tons per month without additional charges or deductions. Under this system, the average daily waste output per floor is below 30 kilograms. Since the building management has not implemented per-floor tenant waste weighing, and Groundhog only leases one floor out of twelve, our daily waste output is minimal.

Additionally, Groundhog has established the "Greenhouse Gas and Waste Management Policy," which outlines specific measures and management strategies for reducing water, electricity, and waste. Annual reduction targets for water and electricity usage are also included in this policy.

Eco Friendly Initiative

Groundhog Technologies primarily engages in the development and sales of software platforms and does not operate in manufacturing activities; therefore, it is not subject to conventional environmental management system certifications. The company generates no industrial waste, with the total volume of such waste being zero. Only general waste is produced from office operations, and all waste disposal complies with relevant government regulations.

We conduct annual inventories of greenhouse gas emissions and water consumption. Our environmental protection goal is to progressively reduce CO_2 emissions, water usage, and total waste output each year.

Groundhog does not use any packaging materials in the delivery of its products or services. Internally, the company actively promotes recycling and waste segregation within the office. We aim to minimize environmental impact by extending the life cycle of products through equipment maintenance and component replacement, reusing scrap paper, and repurposing packaging boxes from suppliers. These actions enhance resource efficiency and reduce environmental footprint.

Social

We value every team member and recognize that diverse backgrounds and perspectives enrich our business. That's why we foster an inspiring culture where individuals thrive and grow together.
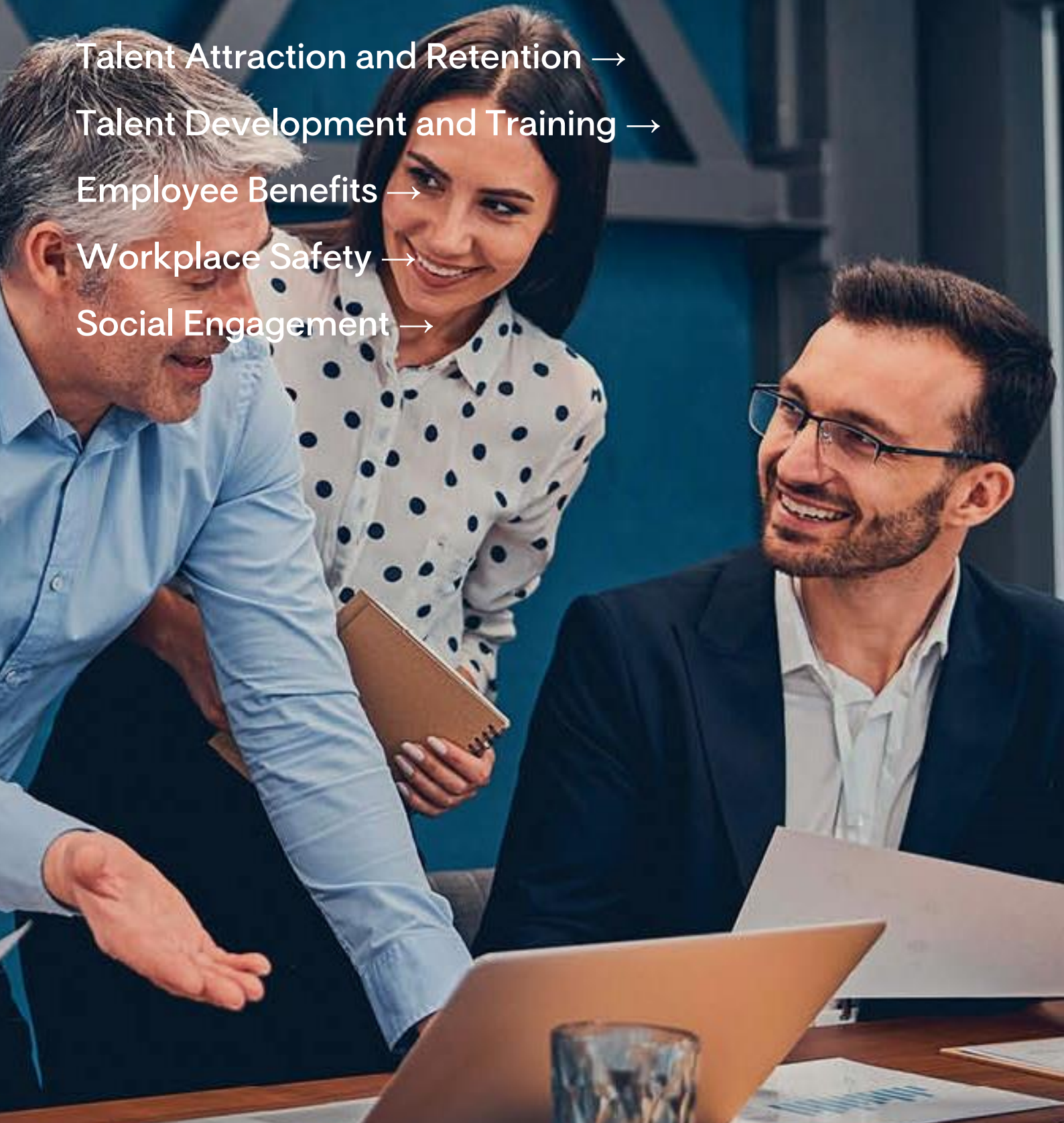
Talent Attraction and Retention →

Talent Development and Training →

Employee Benefits →

Workplace Safety →

Social Engagement →

Material Topics Overview

Material Topic :	15. Talent Attraction and Retention
Significance	Create a quality workplace environment, provide development opportunities, attract and retain high-potential talent to drive corporate growth
Commitment	Offer competitive salaries and rewards, participate in various recruitment and training programs, maintain ongoing communication with talent, and foster an equal-opportunity workplace that attracts and retains high-potential employees
Strategy & Actions	Conduct regular performance evaluations and provide channels for employee feedback
Performance Goals	Employee turnover rate below industry average
Responsible Unit	Human Resources Division

Material Topic :	16. Career Development
Significance	Promote continuous learning and professional growth to enhance employee skills, strengthen team capability, and improve overall corporate competitiveness
Commitment	To improve employees' technical skills, efficiency, and quality awareness, we continuously conduct internal and external training to strengthen professional capabilities across all functions
Strategy & Actions	Identify skill gaps in each department and provide external training subsidies; organize internal training sessions and general education courses
Performance Goals	Digitalized performance evaluation process; develop professional and managerial training programs to enhance employee capabilities
Responsible Unit	Human Resources Division

Performance Highlights

1. Groundhog Technologies' team spans 9 nationalities, with 14% foreign professionals, reflecting our commitment to diversity and inclusion.

2. We respect and support employees' religious beliefs, offering Muslim colleagues flexible time every Friday to attend prayers at the mosque.

3. We encourage new parents to take parental leave and provide the necessary support and stipends to help them balance family and career.

Talent Attraction and Retention

To support its strategic development and globalization, Groundhog Technologies actively recruits and cultivates elite talent from around the world. The company not only offers a competitive salary structure that ranks above average in the digital cloud industry and outperforms most companies in Taiwan, but also spares no effort in retaining and promoting outstanding talent. Given that software professionals place greater emphasis on skills development, career progression, and cross-border residency compared to traditional industries, Groundhog is committed to building an equitable workplace and fostering a diverse workforce to promote international cultural exchange and broaden employees' global perspectives.

Attracting Global Talent

As an internationally recognized software enterprise, Groundhog has a workforce composed of over 14% foreign software professionals. The company proactively supports foreign employees in applying for permanent residency or even naturalization in Taiwan by offering the necessary resources. Depending on business needs and individual work performance, international employees may be granted the flexibility to work remotely to accommodate their living circumstances abroad, enabling them to contribute without concerns over relocation or logistics.

Groundhog also prioritizes the well-being of its global talent - both emotionally and practically - allowing employees from around the world to feel welcomed and supported.

This inclusive and considerate culture helps the company attract software professionals worldwide to join in building a better future together.
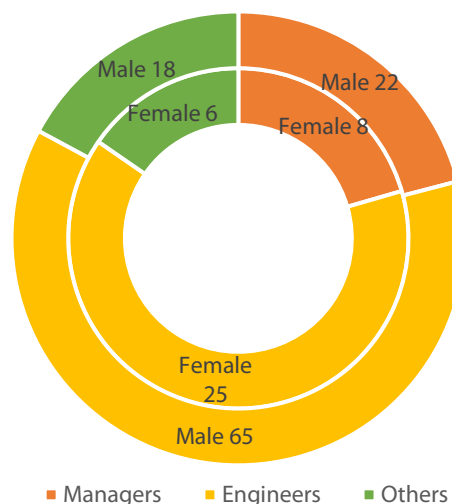
Gender	Nationality Diversity on Staffs							
Female (27%)	🇹🇼 36	🇮🇩 2	⭐ 1					
Male (73%)	🇹🇼 88	🇮🇩 9	🇲🇾 2	🇮🇳 2	🇳🇱 1	🇷🇴 1	🇾🇪 1	🇵🇰 1

* The proportion of foreign employees at the company's headquarters is 14%, with 12% requiring a work permit.

Workforce Diversity

Groundhog Technologies is committed to diversity, inclusion, and workplace rights, actively promoting workforce diversification and equal opportunity. The company has implemented a robust code of conduct to prohibit any discrimination based on gender, race, religion, political affiliation, sexual orientation, social status, nationality, or age. It also ensures a safe and healthy work environment free from harassment, intimidation, or violence.

These measures guarantee equal employment and career development opportunities for all employees. The following table and chart illustrates the distribution of employees by gender, age group, and job category:

Age Group	Male	Female	Percentage
Below 30	27	10	25%
30 to 39	49	18	44%
40 to 49	23	7	20%
Above 50	13	4	11%
Total	**112**	**39**	**151**

Male 18
Female 6
Male 22
Female 8
Female 25
Male 65

■ Managers   ■ Engineers   ■ Others

Empowering Women in Tech

In a field often dominated by male leadership, Groundhog stands out as a company that strives to increase the representation of women in the software industry. Special efforts are made to nurture female middle managers by providing professional training opportunities and hands-on experience beyond theoretical instruction. Recognizing the caregiving responsibilities many women undertake, the company offers family care leave and remote work flexibility on a case-by-case basis.

From its founding days, when only 10% of leadership roles were held by women, the proportion has increased to 27%. While not yet equal, the company values the unique strengths women bring to leadership—especially their attention to detail and ability to support team well-being. Promotions and compensation for female managers are awarded on par with male counterparts when performance benchmarks are met. Groundhog will continue to cultivate female talent as future pillars of the organization.

Gender	Ratio	Role	Ratio
Female	24%	Management	8%
Female	24%	Non-management	16%
Male	76%	Management	27%
Male	76%	Non-Management	49%

The table on the right summarizes 2024 gender-based compensation distribution by job category.

Employee Engagement

Groundhog values employee voices and aims to create a transparent, communicative, and inclusive work environment. Regular labor-management meetings are held to enhance dialogue between employees and management. An anonymous suggestion box is also provided to ensure employees can safely share their opinions and ideas.

Management training programs are implemented to strengthen supervisors' communication, leadership, and emotional intelligence skills, further supporting a positive workplace culture. These efforts align with the three pillars of the employee engagement model: Say (willingness to recommend the company), Stay (desire to remain with the company long-term), and Strive (motivation to perform at their best).

The company is also planning to conduct employee engagement surveys to continuously gather feedback for future improvement initiatives.

Performance Evaluation

Groundhog has established a comprehensive performance management system to support employee growth and career development. Annual evaluations begin in December, with initial assessments completed by February of the following year. One-on-one feedback sessions are held between managers and team members to review the year's performance and challenges, and to set personalized development goals and training plans for the upcoming year.

Evaluation results are used as a key reference for decisions on promotions, salary adjustments, and role assignments. This dialogue-centric approach strengthens employees' sense of achievement and motivation, reflecting the company's strong commitment to talent development and sustainable growth.

Leave of Absence and Turnover Rate

Despite Taiwan's declining birth rate and fierce talent competition — particularly from the booming gaming industry in 2022 — Groundhog remained committed to talent development and competitive benefits. Using the standard formula for calculating turnover rate:

Turnover Rate = Number of Leavers / (End-of-Year Headcount + Number of Leavers)

The company's turnover rate slightly increased from 15% in 2023 to 18% in 2024, due to three long-term employees transitioning to consultancy roles and another three taking parental leave under government-backed family support policies.

The company's turnover rates for the past 3 years is displayed on the right.
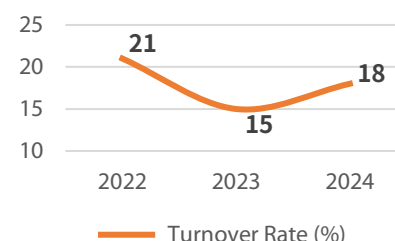
Talent Development and Training

To promote sustainable operations and long-term growth, Groundhog Technologies is committed to cultivating outstanding talent and advanced professional skills. Our training programs are closely aligned with the company's sustainability strategy, offering both internal and external learning opportunities tailored to different job levels, departments, and roles — including both general staff and management. These initiatives are designed to strengthen employees' professional capabilities, support their career development goals, and empower the company to maintain its industry leadership while advancing sustainable growth.

Groundhog provides competency-based training programs for employees at all levels. This includes quarterly onboarding programs for new hires, occasional professional training sessions, and at least two internal management training programs per year. We also respond to specific development needs raised by managers or employees by arranging external training through professional institutions to acquire specialized knowledge or critical skills.

The company's training statistics for 2024 is shown on the right.

Statistics	Counts
Trainings Held	76 sessions
Staff Attendance	291 people
Training Hours	415 hours

Employee Benefits

Employees are Groundhog Technologies' most valuable asset and the cornerstone of our sustainable development. We view our employees as family, and it is our responsibility to provide comprehensive benefits and create opportunities for personal growth and fulfillment. To strengthen employees' sense of belonging and engagement, the company holds quarterly labor-management meetings and has set up an anonymous feedback mailbox. The Human Resources Department is tasked with collecting and responding to employee feedback on a monthly basis. Additionally, an Employee Welfare Committee, composed of staff representatives, is responsible for organizing events such as company trips and year-end parties.

In addition to established systems for personnel management, performance evaluations, and work rules, Groundhog provides a range of employee benefits, including but not limited to the following:

1. Equity plan: In January 2024, the company will apply for an initial public offering (IPO) with a cash capital increase, reserving 13.86% of the issued shares, totaling 415,000 shares, for employees to subscribe, thereby fostering unity between labor and management and attracting and retaining outstanding talent.

2. According to the Company's Articles of Incorporation, if the Company has earnings in a given fiscal year, at least 5% of the annual profit shall be allocated as employee remuneration, with no less than 1% specifically allocated to non-executive (rank-and-file) employees, and no more than 1% allocated as director remuneration (as proposed and approved at the 2025 Annual General Shareholders' Meeting).

    The recipients of such remuneration may also include qualified employees from subsidiaries. This mechanism is designed to reflect the Company's operational performance in employee compensation. However, if the Company has accumulated losses, such losses must be covered first before any allocation of profit.

3. Compensation and employee bonuses: According to the company's articles of association, if the company makes a profit for the year, no less than 5% should be allocated as employee compensation. This includes employees of affiliated companies who meet certain conditions, reflecting business performance in employee remuneration. The company guarantees an annual salary equivalent to 14 months (including three holiday bonuses: Dragon Boat Festival, Mid-Autumn Festival, and Chinese New Year), with additional performance bonuses based on operational conditions.

4. Salary adjustment system: Annual assessments based on actual performance be conducted, and regular external salary surveys are carried out to understand industry salary standards. Fixed salary adjustments are made every March.

5. Labor insurance, health insurance, Labor Pension Contributions, and Group Insurance: To ensure a stable life for employees after retirement, the company has established a retirement plan in accordance with the Labor Standards Act, providing retirement benefits. Details of the retirement system and its implementation are as follows:

● Old system: For employees covered by the Labor Standards Act, the company contributes 2% of the wages to a special account at the Bank of Taiwan supervised by the Labor Pension Reserve Supervisory Committee. Pension payments are based on years of service and the average wage for the six months prior to the approved retirement date to protect employees' rights.

● New system: For employees covered by the Labor Pension Act, the company contributes 6% of the total monthly salary to the employee's individual pension account. Employees who voluntarily contribute to their pension can have their voluntary contribution rate deducted from their monthly salary and transferred to their personal pension account at the Bureau of Labor Insurance.

● In addition to statutory labor and health insurance, the company also provides group comprehensive insurance, superior to the requirements of the Labor Standards Act, including cancer insurance, to ensure employees' health and share medical expenses.

6. An annual travel allowance is provided.

7. A monthly meal allowance is allocated to support team dining activities.

8. Annual health check-up subsidy of NT$3,000 is provided, with the company covering 50% of the cost for any additional check-up items selected by employees.

9. The Employee Welfare Committee is responsible for distributing three annual holiday gift vouchers, birthday gifts, and financial support for weddings, funerals, and other life events.

10. Club activity subsidies are offered, including quarterly funding for employee clubs and interest groups.

11. Training and education support: Internal training is conducted quarterly and on an as-needed basis to meet professional development needs. Employees are encouraged to pursue self-directed learning, with the company offering subsidies for job-related external training programs.

12. Monthly snack provisions and weekly beverages are provided, along with unlimited access to a complimentary coffee machine.

13. Team building activities, year-end banquets, and seasonal celebrations are held on an irregular but regular basis to promote workplace camaraderie.

Workplace Safety

Groundhog Technologies considers its employees to be the company's most valuable asset and a cornerstone of sustainable corporate development. In line with the ISO 45001:2018 certification scope (which covers the entire company) and the Occupational Safety and Health Act, the company has established internal Occupational Health and Safety Guidelines, forming a comprehensive process for planning, implementing, evaluating, and improving its occupational health and safety management system. In compliance with the law and its implementation regulations, Groundhog has also developed specific policies to address workplace sexual harassment, human-factor-related hazards, unlawful conduct during the execution of duties, and illness prevention associated with abnormal workloads. These measures are designed to actively promote a safe and healthy work environment for all employees.

To support employee well-being, the company provides group insurance, dedicated lactation rooms for female employees, regular health checkups for employees and their family members, and has signed service agreements with affiliated medical institutions to provide on-site health promotion services. A nurse visits the office twice a month to offer health consultations, and physicians visit twice a year to analyze health reports and provide individual health counseling. Furthermore, the company implements flexible working hours and a remote work policy to support employees in balancing their professional and personal lives.

Groundhog is firmly committed to maintaining a safe working environment. In accordance with fire safety regulations, the company conducts annual fire safety inspections, organizes two fire drills per year for employees, and cooperates with the building management office to carry out public safety inspections of the office building every two years as required by construction-related laws. These efforts ensure that all employees are well-trained and equipped with the knowledge necessary to respond effectively to emergencies.

As part of its proactive health strategy, Groundhog engages medical professionals to provide on-site health services. Nurses provide bi-monthly support, while doctors offer semiannual consultations and health education. As of the end of December 2024, the company reported no occupational injuries or incidents, demonstrating the effectiveness of its safety management systems. Additionally, to promote adequate rest, an internal system automatically reminds employees to use any remaining annual leave on their work anniversary, further encouraging work-life balance and reinforcing the company's people-centered values.

Social Engagement

Groundhog Technologies firmly believes that a corporation's mission extends beyond maximizing revenue—it must also contribute meaningfully to the sustainable development of the environment, society, and economy. During the COVID-19 pandemic, the company leveraged its industry-leading positioning accuracy and core AI algorithms, along with big data analytics capabilities, to assist governments and private entities in Taiwan, Indonesia, India, Saudi Arabia, and the United Arab Emirates in implementing effective epidemic prevention measures. Through the use of precise location tracking technologies, Groundhog enabled accurate contact tracing and quarantine monitoring, helping to slow the spread of the virus.

Beyond pandemic-related support, the company also applied its geo-location technologies to major public events and urban planning projects, including smart city development in Saudi Arabia, infrastructure planning for Expo 2020 Dubai, the 2022 FIFA World Cup in Qatar, and the Hajj pilgrimage in Mecca. By analyzing telecom signaling big data and utilizing AI-powered predictions, the company aided local governments in designing transportation routes and schedules before events, and provided real-time monitoring of crowd densities during the events. The Groundhog platform automatically alerts local authorities when overcrowding is detected, helping prevent stampedes and enhancing public safety and quality of life.

Groundhog positions itself as a pioneer in mobility data, using its core expertise to promote a sustainable and safe society. In addition to contributing to the public good through its technologies, the company also remains committed to advancing education, cultural preservation, and the inclusion of underprivileged communities, thereby fostering social harmony. In line with its technological mission, the company has initiated the development of a crime-tracking system based on location data, which can be used to identify fraud operation hubs, monitor the movement of criminal suspects, and issue alerts in cases of restraining order violations. By helping to establish a robust social safety net, Groundhog aims to create a stable environment where people can live and work with peace of mind—an essential foundation for long-term corporate development and a reflection of its social responsibility in combating fraud and crime.

Social Goods

To promote equal education, cultural development, and support for disadvantaged groups, Groundhog Technologies allocates resources annually to public welfare initiatives. These include donations to the Ministry of Education's school savings accounts to provide financial support for low-income students, contributions to the Border Action Association to support the education of children in remote areas, and donations to the New Taipei City Gong-Hao Charity Association, which provides food, healthcare, and household services to underprivileged families and elderly individuals living alone.

In 2024, in addition to continuing its support for education and vulnerable communities, the company also participated in a client-led ESG initiative, the "Sustainability Vanguard Project," assisting a rural school with the renovation of its archery training facilities to help students reach their full potential. Groundhog also made donations to the Taiwan Breast Cancer Foundation to improve women's health and quality of life, to the Buddhist Electronic Buddhist Scripture Foundation to support digital preservation of cultural texts, and to the NTU Alumni Association to provide scholarships to academically outstanding but financially disadvantaged students.

Year	Organization Donated
2024	• Ministry of Education School Education Savings Account • Border Action Association • Join hands with the Sustainability Vanguard Project • Breast Cancer Academic Research Foundation • New Taipei City Gonghao Charity Association, Luzhou Care Center • Buddhist Electronic Buddhist Scripture Foundation • National Taiwan University Alumni Association

Table on the right presents Groundhog's social donation activities over the past year.

Community Development

Groundhog Technologies is headquartered in Taipei City and actively supports local employment. In 2024, the company hired 10 new employees who were registered residents of Taipei, accounting for 6.85% of the total workforce by the end of the year. Cumulatively, 39 employees - representing 26.71% of total staff - were Taipei residents, demonstrating the company's commitment to supporting local community development through job creation.

Appendix

GRI Index →

SASB Index →

ESG Report Index
for Public Listed Company in Taiwan →

Greenhouse Gas Scope 3 Inventory →

GRI Content Index

GRI 1: Foundation 2021

Statement of Use: Groundhog Technologies has reported in accordance with the GRI Standards for the period January 01, 2024 – December 31, 2024.

GRI 1 used: GRI 1 Foundation 2021

Applicable GRI
Sector Standard(s):   Not applicable

GRI 2 : General Disclosures 2021

Standard	Disclosure	Our Response / Reference
Section 1: The Organization and Its Reporting Practices		
GRI 2-1	Organizational details	About Groundhog
GRI 2-2	Entities included in the organization's sustainability reporting	About This Report
GRI 2-3	Reporting period, frequency and contact point	About This Report
GRI 2-4	Restatements of information	No Restatements
GRI 2-5	External assurance	About This Report
Section 2: Activities and Workers		
GRI 2-6	Activities, value chain and other business relationships	About Groundhog Our Solutions
GRI 2-7	Employees	Talent Attraction and Retention
GRI 2-8	Workers who are not employees	3 part-time consultants were hired during the reporting year
Section 3: Governance		
GRI 2-9	Governance structure and composition	Governance Structure Board, Committee Functions and Audit
GRI 2-10	Nomination and selection of the highest governance body	Governance Structure Board, Committee Functions and Audit
GRI 2-11	Chair of the highest governance body	Governance Structure Board Independence
GRI 2-12	Role of the highest governance body in overseeing the management of impacts	ESG Enhancement Units
GRI 2-13	Delegation of responsibility for managing impacts	ESG Enhancement Units
GRI 2-14	Role of the highest governance body in sustainability reporting	ESG Enhancement Units
GRI 2-15	Conflicts of interest	Board Independence
GRI 2-16	Communication of critical concerns	Stakeholders' Engagement
GRI 2-17	Collective knowledge of the highest governance body	Board Members' Training Status
GRI 2-18	Evaluation of the performance of the highest governance body	Board Assessment
GRI 2-19	Remuneration policies	Remuneration Committee

Standard	Disclosure	Our Response / Reference
Section 3: Governance		
GRI 2-20	Process to determine remuneration	Remuneration Committee
GRI 2-21	Annual total compensation ratio	Omitted due to confidentiality
Section 4: Strategy, Policies and Practices		
GRI 2-22	Statement on sustainable development strategy	Ambition and Blueprint
GRI 2-23	Policy commitments	Business Integrity Talent Attraction and Retention
GRI 2-24	Embedding policy commitments	Business Integrity
GRI 2-25	Processes to remediate negative impacts	Business Integrity Social Responsibility and Legal Compliance Risk Management Stakeholders' Engagement
GRI 2-26	Mechanisms for seeking advice and raising concerns	Stakeholders' Engagement Employee Engagement
GRI 2-27	Compliance with laws and regulations	Social Responsibility and Legal Compliance
GRI 2-28	Membership associations	Groundhog is a member of O-RAN alliance
Section 5: Stakeholder Engagement		
GRI 2-29	Approach to stakeholder engagement	Stakeholders' Engagement
GRI 2-30	Collective bargaining agreements	Employee Engagement

GRI 3 : Material Topics 2021

Standard	Disclosure	Our Response / Reference
GRI 3-1	Process to determine material topics	Materiality Assessment
GRI 3-2	List of material topics	Material Topic Boundaries
GRI 3-3	Management of material topics	Material Topics Overview

GRI 200 : Economic Series

Topic	Standard	Disclosure	Our Response / Reference
GRI 201: Economic Performance 2016	GRI 201-1	Direct economic value generated and distributed	Employee Benefits
	GRI 201-2	Financial implications and other risks and opportunities due to climate change	Climate Change Response
	GRI 201-3	Defined benefit plan obligations and other retirement plans	Employee Benefits

GRI 300 : Environmental Series

Topic	Standard	Disclosure	Our Response / Reference
GRI 302: Energy 2016	GRI 302-1	Energy consumption within the organization	Energy and Greenhouse Gas
	GRI 302-3	Energy intensity	Energy and Greenhouse Gas
	GRI 302-4	Reduction of energy consumption	Energy and Greenhouse Gas
GRI 305: Emissions 2016	GRI 305-2	Energy indirect (Scope 2) GHG emissions	Energy and Greenhouse Gas
	GRI 305-3	Other indirect (Scope 3) GHG emissions	Energy and Greenhouse Gas
	GRI 305-4	GHG emissions intensity	Energy and Greenhouse Gas
	GRI 305-5	Reduction of GHG emissions	Energy and Greenhouse Gas

GRI 400 : Social Series

Topic	Standard	Disclosure	Our Response / Reference
GRI 401: Employment 2016	GRI 401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Employee Benefits
GRI 403: Occupational Health and Safety 2018	GRI 403-1	Occupational health and safety management system	Workplace Safety
	GRI 403-3	Occupational health services	Workplace Safety
	GRI 403-6	Promotion of worker health	Workplace Safety
GRI 414: Supplier Social Assessment 2016	GRI 414-1	New suppliers that were screened using social criteria	Supplier Management

SASB Index

Applicable

Industry Standard: Software & IT Services (Version 2023-12)

Topic	Code	Metric	Our Response / Reference
Environmental Footprint of Hardware Infrastructure	TC-SI-130a.1	(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable	986.80 GJ of electricity consumed, all from the Taiwan Power Company grid with no renewable energy used.
	TC-SI-130a.2	(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress	Water and Waste
	TC-SI-130a.3	Discussion of the integration of environmental considerations into strategic planning for data centre needs	Servers and standalone air conditioning systems in our data center will be gradually replaced with more energy-efficient models in the future.
Data Privacy & Freedom of Expression	TC-SI-220a.1	Description of policies and practices relating to targeted advertising and user privacy	Please refer to the Privacy Policy on the company's official website.
	TC-SI-220a.2	Number of users whose information is used for secondary purposes	No such incidents occurred during the reporting year.
	TC-SI-220a.3	Total amount of monetary losses as a result of legal proceedings associated with user privacy	Information Security
	TC-SI-220a.4	(1) Number of law enforcement requests for user information, (2) number of users whose information was requested, (3) percentage resulting in disclosure	No such incidents occurred during the reporting year.
	TC-SI-220a.5	List of countries where core products or services are subject to government required monitoring, blocking, content filtering, or censoring	No such incidents occurred during the reporting year.
Data Security	TC-SI-230a.1	(1) Number of data breaches, (2) percentage that are personal data breaches, (3) number of users affected	Information Security
	TC-SI-230a.2	Description of approach to identifying and addressing data security risks, including use of third-party cybersecurity standards	Information Security
Recruiting & Managing a Global, Diverse & Skilled Workforce	TC-SI-330a.1	Percentage of employees that require a work visa	Attracting Global Talent
	TC-SI-330a.2	Employee engagement as a percentage	Employee Engagement
	TC-SI-330a.3	Percentage of (1) gender and (2) diversity group representation for (a) executive management, (b) non-executive management, (c) technical employees, and (d) all other employees	Board Diversity and Independence Workforce Diversity
Intellectual Property Protection & Competitive Behaviour	TC-SI-520a.1	Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behaviour regulations	No such incidents occurred during the reporting year.
Managing Systemic Risks from Technology Disruptions	TC-SI-550a.1	Number of (1) performance issues and (2) service disruptions; (3) total customer downtime	No such incidents occurred during the reporting year.
	TC-SI-550a.2	Description of business continuity risks related to disruptions of operations	Information Security

ESG Report Index for Public Listed Company in Taiwan

Regulation	Reference
Article 3 The ESG report shall include relevant environmental, social and corporate governance risk assessments and lay out the performance indicators to manage the material topics identified.	Please refer to Material Topics Overview in each chapter
Article 4-1 A listed company shall dedicate a specific section of the report to the disclosure of climate-related information.	Please refer to the table below
Article 4-2 The ESG report of a public listed company must disclose the average and median salaries of full-time employees who do not hold supervisory positions, as well as their changes compared to the previous year.	Please refer to MOPS website

Climate-related information

	Item	Current Status
1	Supervision and Governance of Climate-Related Risks and Opportunities by the Board of Directors and Management	Please refer to Climate Change Response section
2	Describe how the identified climate risks and opportunities impact the company's business, strategy, and finance (short-term, medium-term, and long-term)	Please refer to Climate Change Response section
3	Describe the Impact of Extreme Climate Events and Transition Actions on Finance	Please refer to Climate Change Response section
4	Describe how the process of identifying, assessing, and managing climate risks is integrated into the overall risk management system	Please refer to Climate Change Response section
5	When assessing resilience to climate change risks using scenario analysis, the scenario, parameters, assumptions, analysis factors, and significant financial impacts should be described	Assessment program planning underway
6	If there is a transformation plan in place to address climate-related risks, please provide the details of the plan, including the indicators and goals used to identify and manage both physical and transition risks	Not applicable
7	If internal carbon pricing is used as a planning tool, the basis for determining the price should be explained	Not applicable
8	If climate-related targets are set, information on the activities covered, scope of GHG emissions, the planning schedule, and the annual progress of achievement should be stated; if carbon offsetting or renewable energy certificates (RECs) are used to achieve the targets, the source and quantity of carbon offsetting or the quantity of RECs should be stated	The company will replace equipment with energy-efficient ones soon to lower energy use and cut greenhouse gas emissions. There are no plans to use carbon offsets or RECs at this time. See section Energy and Greenhouse Gas for more details
9	Inventory and Confirmation Status of Greenhouse Gas Emissions, Reduction Targets, Strategies, and Specific Action Plans	Please refer to the table below.
1. Greenhouse Gas Inventory and Assurance Status for the Past Two Years		
1	GHG Emission Inventory	The scope of the assessment covers the headquarters and subsidiaries included in the consolidated financial statements.
2	GHG Emission Assurance	Relevant data has not yet been assured by a third-party organization.
2. Greenhouse Gas Reduction Targets, Strategies, and Action Plans		
Please refer to Energy and Greenhouse Gas section of this report		

Greenhouse Gas Scope 3 Inventory

Category	Emissions factors	2023 Emissions	2024 Emissions	YoY
	Reasons for Not Applicable or Unable to Calculate			
1. Purchased goods and services	GZA Scope 3 Calculator	372,969.00	361,970.42	-3.04%
2. Capital goods	GZA Scope 3 Calculator	10,218.00	2,179.00	-368.93%
3. Fuel- and energy-related activities	EPA Carbon Footprint Database	23,656.74	24,188.50	2.20%
4. Upstream transportation and distribution	GZA Scope 3 Calculator	1,431.00	1,400.00	-2.21%
5. Waste generated in operations	Our operations only generate general waste, which is collected and removed by a qualified waste disposal contractor engaged by the building management. The contractor is unable to provide GHG emissions data from waste disposal, and neither the weight nor the volume is categorized for calculation. Therefore, this category cannot be inventoried or calculated.			
6. Business travel	EPA Carbon Footprint Database ICAO Carbon Emissions Calculator	18,561.01	25,374.43	26.85%
7. Employee commuting	EPA Carbon Footprint Database	47,347.02	50,210.58	5.70%
8. Upstream leased assets	Water-related emissions: Scope 3, Category 1 Electricity-related emissions: Scope 2 and Scope 3, Category 3 GHG data for building staff commuting and suppliers' goods/services cannot be provided by the lessor; thus, emissions for these items cannot be calculated.			
9. Downstream transportation and distribution	Products are delivered electronically, requiring no transportation or logistics services; thus, this category is not applicable. Employee travel to client sites is included in Scope 3, Category 6.			
10. Processing of sold products	No outsourcing for further processing; not applicable.			
11. Use of sold products	Low carbon power website	6,383,468.02	6,583,166.61	3.03%
12. End-of-life treatment of sold products	As products are software and platforms, no end-of-life treatment is required; not applicable.			
13. Downstream leased assets	No assets leased to third parties; not applicable.			
14. Franchises	No franchise operations; not applicable.			
15. Investments	No equity or debt investments in other companies; not applicable. Subsidiaries' Scope 3 emissions are already included under Category 1 and Category 6.			
Scope 3 Emission Total		**6,857,650.80**	**7,048,489.55**	**2.71%**