



Go Extra Mile

Taiwan High Speed Rail Sustainability Report 2021

Be There



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About this Report

In 2009, Taiwan High Speed Rail Corporation (hereinafter referred to as “THSRC”) released the first ever “THSRC Corporate Social Responsibility White Paper” to disclose its performance and actions in social responsibility. In response to international trends and compliance with non-financial information disclosure standards in Taiwan, the report has been officially renamed as “THSRC Corporate Social Responsibility Report” since 2015, and renamed as “THSRC Sustainability Report” again in accordance with the “Corporate Governance 3.0 - Sustainable Development Roadmap” issued by the Financial Supervisory Commission in 2022. This report is the ninth Sustainability Report published by THSRC, and the previous edition was issued in June 2021. THSRC continues to enhance its operational capabilities by demonstrating its efforts locally and expectations internationally through the 2021 Sustainability Report. In the future, the Sustainability reports will be published periodically every year.

Current version: Issued in June 2022

Reporting Period

This report discloses the corporate sustainability results and performance of THSRC in 2021 (from January 1, 2021 to December 31, 2021). However, part of the content involves trend comparison, and so historical data will be revealed at the same time.

Basis of Preparation, Scope and Boundary

This report complies with the requirements of the core option of the Global Reporting Initiative Sustainability Reporting Standards (referred to as “GRI Standards”) of the Global Sustainability Standards Board (GSSB), the “Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies,” the “Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies,” and indicators issued by the Sustainability Accounting Standards Board (SASB) for the Rail Transportation industry, and disclose based on the four core elements of the Task Force on Climate-related Financial Disclosures (TCFD). In addition, it has been verified by a third-party certification body, the British Standards Institute (BSI) that this report meets the core options of the GRI Standard and complies the AA1000AS Version 3 Type 2 high-level assurance. The independent assurance statement issued by the third-party certification body has also been included in the Appendices to this report. Based on the requirements of the GRI Standards, this report discloses THSRC’s responses to material topics in economic, environmental, and social aspects, as well as related performance.

The scope of this report is consistent with the financial statements. There is no significant difference between this report and the previous edition in terms of scope and quantitative data measurement methods. Any difference in terms of scope or data measurement from the previous edition will be indicated in the particular paragraph. All the statistical data disclosed in this report were compiled and provided by our internal first-level units. Financial performance data were information published publicly upon attestation by certified public accountants (CPAs) and were consistent with data in THSRC’s annual reports. The basis for calculating and estimating environmental data was derived from public data provided by the government and was calculated by THSRC. All the data related to the amount in this report are calculated in New Taiwan Dollars.



If you have any suggestions or questions about this report, please feel free to contact us at:



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Website



ESG Section

Letter from the Chairman

Looking back on 2021, the Coronavirus disease 2019 (COVID-19) pandemic has hit Taiwan, causing far-reaching impacts on the economy and tourism industry in Taiwan, and bringing huge challenges to our operating environment. As the backbone of intercity transportation in the western corridor, THSRC not only takes the initiative to cooperate with the governments pandemic prevention policies, but also shoulders the crucial responsibility of maintaining sustainable social and economic development. Therefore, we continue to protect the health and safety of passengers and partners through flexible pandemic prevention measures to demonstrate the operational resilience of THSRC.

Since its establishment 23 years ago, THSRC has not only maintained a steady pace of growth and but also upheld the corporate vision of "To be the Platform for Advancement and Enjoyment," implemented the five core values of "discipline, integrity, efficiency, innovation, understanding," and regarded the 4Ts of "Transportation, Technology, Taiwan, and Touch" as the core of sustainable development, so as to improve operational safety and service quality as well as provide people with secure and caring travel services at all times.

"Safety" is the cornerstone of THSRC's pursuit of sustainable operation. We have continued to advance safety and quality improvement programs, and strengthened the resilience of our operating facilities in response to the impact of climate change. For example, we conduct comprehensive review of the safety of the railway tracks side slope. In addition to accelerating the update and upgrade of automated monitoring systems and implementing on-site inspections and rehearsals, the automated monitoring systems and related protective devices have also been incorporated into the design of railway track systems. We have also developed climate change adaptation strategies for railway transportation industry to effectively response to the potential impacts resulted from climate change.

THSRC not only focuses on providing complete and safe travel services to passengers, but also demonstrates its determination to support the development of the high-speed rail industry chain in Taiwan. Since promoting localization in 2007, the company has cooperated with 127 domestic manufacturers and successfully developed 1,207 pieces of high-speed railway maintenance materials. In November 2021, THSRC officially launched the first tram line maintenance engineering vehicle developed and manufactured in Taiwan, turning a new page in the history of the goal of "Localization of Domestic Vehicles." In the future, we will continue to actively invest in the localization development of maintenance materials, equipment and systems, committed to realize the vision of localization of railway industry technology.

In 2021, THSRC issued its first sustainability bonds to strengthen its green investment and socially beneficial investment programs, demonstrating our commitment and determination to deepen THSRC's role as a green carrier. Our efforts on sustainability have also received a lot of external encouragement and recognition. For example, since 2018, the company has been continuously selected as a constituent stock of the FTSE4Good TIP Taiwan ESG Index. As of 2021, the company has even been ranked in the top 5% of listed companies in the Corporate Governance Evaluation System for four consecutive years. Besides, we were also awarded the "Taiwan Corporate Sustainability Awards (TCSA)." The recognition from various stakeholders has motivated THSRC to keep pursuing a higher standard of ESG vision.

I would like to express sincere appreciation to our partners and passengers who have accompanied THSRC along the way and continue to provide positive power. We hope to further share the promotion results of various sustainability issues with stakeholders in this report. Facing the rapidly changing external environment, THSRC will continue to advance with the times, implement our unchanging commitment to society, the environment and corporate governance, deepen rail professional capabilities through technology, and continue to build a more inclusive, resilient and sustainable green transportation.

Chairman

Y. C. Chiang





Letter from the President

In 2021, despite the impact of the pandemic on THSR ridership, the Company will still shoulder the crucial responsibility of the western transportation lifeline of Taiwan, uphold the highest standards to implement pandemic prevention work at stations and trains, and maintain a safe and secure ride environment. At the time when the pandemic is gradually easing, THSRC cooperates with the government's revitalization policy to launch the "Quintuple Stimulus Vouchers" special offer program, and also launches special package offers with tourism operators in Taiwan, which have received enthusiastic responses from tourists, effectively stimulated the recovery of the tourism and transportation markets, and also vitalized the tourism industry and economic development of various regions.

In order to create caring services and improve service quality, THSRC has continued to promote a variety of new products and services by leveraging technologies. For example, since the launch of "Artificial Intelligence Customer Service" at the end of 2020, we continuously optimized interactive consultation and personalized services, and won the "18th National Brand Yushan Award - Best Popular Brand" in 2021, demonstrating our dedication to creating the best travel experience for every passenger.

In addition, THSRC has accumulated more than 1.71 million "TGo" members as of the end of 2021. Passengers can not only redeem or discount their THSRC tickets by spending points, but also redeem a variety of e-ticket products on the "TGo 365" Point Redemption Platform. We continue to deepen the value of points through cross-industry alliance, and improve the diversity, convenience and practicability of redemption, a manifestation that high-speed rail membership points have been close to the daily life of passengers.

In order to fulfill corporate social responsibility and strengthen ESG practices, THSRC completed the establishment of "THSRC e-Procurement" in January 2021. Through electronic procurement operations, THSRC not only significantly implements environmental protection policies by reducing paper consumption, but also enhances the efficiency of tendering, bidding, evaluation, and decision for all procurement cases, which is conducive to expanding suppliers' willingness to bid, and building a procurement environment of honesty, integrity, efficiency, and sustainability.

Looking forward to the future, THSRC will uphold the original intention of safety first, conscientiously provide the highest quality ride services, continue to implement the "4T" strategy into daily operations through proactive actions such as improving travel quality and innovative services, take the initiative to fulfill the commitment to sustainable development, and look forward to working with value chain partners and stakeholders together to achieve a new future of sustainable transportation.

President

Performance Highlights for 2021



Transportation Professional Transportation

- The punctuality rate was 99.00%, and the average delay time was only about 0.287 minutes.
- Since the commencement of operations to the end of 2021, the number of casualties among passengers due to traffic accidents is 0.
- A total of 1,800 sets of turnout inspections were completed, and routine track inspection and track irregularity inspection were completed for 8,241 kilometers of track, respectively.
- 87 disaster prevention and rescue drills (training) were completed.



Taiwan Enhancing Local Connection

- The "Quintuple Stimulus Vouchers" program has successfully attracted nearly 210,000 tourists, with an achievement rate of 123%.
- THSRC participated in the Taipei International Travel Fair and won the "Best Pavilion Award."
- The proportion of local services purchased exceeded 98.76%, and the financial procurement exceeded 85.77%.
- From 2011 to 2021, THSRC worked with a total of 127 alternative material development suppliers, saving a total amount of nearly NT\$3 billion.
- THSRC entrusted China Steel Corporation to develop and manufacture the "Overhead Catenary System Maintenance Vehicle," and the proportion of localized components reached 60%.
- THSRC promoted the replacement plan of "Programmable Logic Controller (PLC) Turnout Control Cabinet," which is independently designed, developed and produced by THSRC to demonstrate its technical independence.
- Supported 70 to 75 service sales staff and yielded the local business revenue of more than NT\$100 million.



Technology Innovative Technology

- The THSRC App has been downloaded by more than 1.2 million people, of which the number of registered TGO members has exceeded 960,000 people.
- "Artificial Intelligence Customer Service" accuracy was 93% on average.
- The THSRC's Facebook Fan Page garnered 422,000 fans cumulatively, and the posts on THSRC's Facebook Page reached 2.965 million throughout the year, with 597,000 interactions on these posts.



Touch Sustainable Care

- THSRC continued to be selected as a constituent stock of the "FTSE4Good TIP Taiwan ESG Index," and ranked among the top 5% of listed companies in the "Corporate Governance Evaluation" for four consecutive years.
- THSRC first issued NT\$1 billion of sustainability bonds, and all the funds raised will be used for green investment and social benefit investment plans.
- Based on the calculation of passenger-kilometer, THSRC significantly reduced carbon dioxide emissions by 628,209 metric tons compared to passenger cars, which is equivalent to the carbon uptake of 1,615 Da-An Forest Parks.
- The annual solar power generation of the four depots and six stations reached 11,657.015 MWh.
- From 2015 to 2021, a total of 576 performances under the "THSR ART Together Program" were held, with a total of 17,123 performers.
- THSRC raised nearly NT\$9.5 million under the "High-Speed Educational Endowment Program."
- From 2009 to 2021, the "THSRC Smiling Train Program" provided assistance to 812 disadvantaged groups with a total of 144,882 participants.
- A total of 2,743 people participated in the "Annual THSRC Winter Outreach Blood Drive" event, with 4,153 units of blood raised.
- For the "HSR Camps," a total of 4 camps were held throughout the year with over 2,300 participants and a total of 120 students participating.





Stakeholders and Material Topics





Identification of Stakeholders

THSRC refers to the AA1000 Stakeholder Identification Standard to identify eight types of important stakeholders. We ensure that we truthfully respond to the demands and expectations of different stakeholders in our daily operations through diverse communication channels on a regular and irregular basis.

In addition, regarding the communication between THSRC and various stakeholders and the handling of major disputes, a report of the board of directors is regularly submitted every year. The communication with various stakeholders and the handling of major disputes in 2021 have been submitted to the 15th meeting of the ninth session of the Board of Directors of the Company on June 16, 2021.

Performance of Communication with Important Stakeholders

Type	Top Three Priority Issues	Communication Channel (Frequency)	Communication Performance in 2021
 Passengers	<ul style="list-style-type: none"> Transportation safety management Customer relationship and quality management Traffic dispersion and transfer services 	<ul style="list-style-type: none"> Publications/Digital tools (Monthly/Non-periodic) Corporate website/Dedicated page (Monthly/Non-periodic) E-mail (Non-periodic) 	<ul style="list-style-type: none"> THSRC App has been downloaded by about 1.2 million people cumulatively since the end of 2017 to the end of 2021 THSRC's FB Fan Page garnered over 422,000 fans by the end of 2021 The Company has published 144 issues of TLife magazine as of December 2021. The TLife website was launched in October 2021, which provides digital services. Users can read the current and past magazine content anytime and anywhere outside the THSRC coverage area, and further search, bookmark, and share TLife content From January to December, 730,000 customer inquiries or opinions were received, and the response rate of each channel was 91% (via voice services) and 97% (via written correspondence)
 Community Residents	<ul style="list-style-type: none"> Transportation safety management Traffic dispersion and transfer services Customer relationship and quality management 	<ul style="list-style-type: none"> Interviews/Exchange of ideas/Visits (Non-periodic) 	<ul style="list-style-type: none"> Conducted 18 noise investigations and interviews with residents along the HSR line to effectively communicate the principles of noise prevention measures, among which only 1 case in "Dayuan District, Taoyuan City" required further improvement on noise prevention since the maximum volume of the HSR exceeded the control standard Arranged telephone or in-person visits, or ad-hoc visits to schools, enterprises and community development associations affiliated to THSRC to interact with local opinion leaders so as to maintain good local relations Gives full play to fulfill the spirit of corporate social responsibility, spreads love through blood donation, and appeals to the public to actively respond to blood donation to help others. In 2021, a total of 2,743 people participated, with 4,153 units of blood raised. Since its inception in 2012, over 14,000 people have participated, with a total of 17,920 units of blood raised
 Media	<ul style="list-style-type: none"> Transportation safety management Privacy and Information Security Management Corporate governance 	<ul style="list-style-type: none"> Media contacts (Non-periodic) 	<ul style="list-style-type: none"> Issued 113 press releases and news bulletins, organized 5 press conferences and media events, clarified erroneous reports 30 times, handled 131 media inquiries, published 26 feature reports, and contacted the media 14 times throughout the year
 Employees	<ul style="list-style-type: none"> Transportation safety management Operational strategies and performance Employee care and labor protection 	<ul style="list-style-type: none"> Internal/External meetings (Monthly/Four times a year) Publications/Digital tools (Monthly) Internal/External activities (Once a year) 	<ul style="list-style-type: none"> Conducted a total of about 48 Town Hall meetings internally at 12 HSR stations throughout the year Convened a total of 48 labor-management conferences at 12 HSR stations Issued 12 THSR High Speed Vision Newsletter, with a total of 93 topics and a total of 129,254 views Organizes Quality Month in November, including proposal improvement awards, two preliminary rounds and one final round in Quality Control Circle The Vehicle Maintenance Department represented the Company in the 2021 Taiwan Continuous Improvement Awards, and won the second place in the Taiwan Continuous Improvement Awards - Unity Group and the "Silver Tower Award" trophy

Type	Top Three Priority Issues	Communication Channel (Frequency)	Communication Performance in 2021
 Shareholders and Investors (Note)	<ul style="list-style-type: none"> Operational strategies and performance Corporate governance Legal compliance 	<ul style="list-style-type: none"> Shareholders' meeting/Investor conference (Non-periodic/monthly/Once a year) Internal/External Reports (Non-periodic/Once a year) 	<ul style="list-style-type: none"> Shareholders' Meeting on August 12, 2021 Investor Conference on March 11, 2021 Investor Conference on May 25, 2021 Investor Conference on August 16, 2021 Investor Conference on November 29, 2021
 Partners (including Non-Governmental Organizations and Schools)	<ul style="list-style-type: none"> Transportation safety management Climate change mitigation and adaptation Legal compliance 	<ul style="list-style-type: none"> Internal/External activities (Non-periodic/Four times a year) 	<ul style="list-style-type: none"> 2021 "High-Speed Educational Endowment Program" cooperated with the "Down Syndrome Foundation R.O.C." raising nearly NT\$9.5 million Organized a total of four winter HSR Camps in 2021, attracting 2,329 online registrations, with a total of 120 students participated
 Suppliers and Contractors	<ul style="list-style-type: none"> Transportation safety management Privacy and Information Security Management Operational strategies and performance 	<ul style="list-style-type: none"> Internal/External meetings (Monthly/Non-periodic) Inspection/Repair/Examination/Survey/Maintenance (Non-periodic/Monthly/Once a Year) Internal/External activities (Once a year) 	<ul style="list-style-type: none"> System and equipment maintenance Suppliers/contractors completed 100% of the work according to the contract period Completed annual damage prevention and inspection survey Held insurance workshops and insurance claims conferences for four times each Passed ISO 9001:2015 quality management system verification Contractors submitted monthly manufacturer reports and held technical report meetings each month
 Government and Competent Authorities	<ul style="list-style-type: none"> Customer relationship and quality management Transportation safety management Traffic dispersion and transfer services 	<ul style="list-style-type: none"> Internal/External meetings (Monthly) Internal/External reports (Four times a year) Inspection/Repair/Examination/Survey/Maintenance (Once a year) 	<ul style="list-style-type: none"> Explained the video on the name "Worry-Free about Pregnancy, Childbirth, and Childcare" for CEDAW gender equality of THSRC to the Railway Bureau of the Ministry of Transportation and Communications in October 2021, and met the target of the gender equality project of the competent authority The test reported that THSRC had a 100% completion rate in terms of matters to be cooperated according to laws and regulations (full score 100%) Passed the annual regular THSRC operation inspection conducted by the Ministry of Transportation and Communications/Railway Bureau

Note: THSRC was officially listed on the Taiwan Stock Exchange on October 27, 2016, and was the first rail transportation operated to be listed in Taiwan. As of March 28, 2022, the shareholding structure was as follows: Government agencies (45.1%), other juridical persons (17.2%), foreign institutions and foreigners (9.1%), individuals (15.4%), financial institutions (9.6%), and state-owned enterprises (3.6%).

Identification and Responses to Material Topics

THSRC prepares its Sustainability Report in compliance with the GRI Standards issued by the GSSB, and conducts analysis of material topics according to the following four steps to confirm the scope of disclosure in the report and examine the effectiveness of sustainable management.



Step 1: Identification

In order to ensure that the identification results are objective and complete, and at the same time cover the material topics the railway transportation industry peers are concerned about, when identifying material topics in 2021, THSRC not only reviewed the sustainable issues in the previous version of the THSRC's Sustainability Report while reviewing the material topics disclosed by leading domestic and international companies, but also referred to the material topics of the railway transportation industry listed by the Sustainability Accounting Standards Board (SASB) and the sustainability requirements of international sustainability ratings, such as Dow Jones Sustainability Index (DJSI). Finally, a total of 19 sustainable issues were found in the list in 2021, which was not significantly different from that in 2020.



Step 2: Prioritization

THSRC analyzes the materiality of each topic according to each topic in three major areas, namely "effect on stakeholders' assessments and decision-making," "impact of the enterprise on the economy, the environment, and the society," and "importance to business operations," and distributes questionnaires to survey stakeholders' opinions. In 2021, we collected a total of 143 questionnaires from internal and external parties, including the opinions of employees (22 questionnaires) and external parties comprising seven types of stakeholders (121 questionnaires).

After quantitative analysis and prioritization of the above questionnaires, THSRC classified 19 sustainable issues into six key topics, 11 important topics, and two topics of continuous concern. Among them, "key topics" and "important topics" form the scope of materiality disclosures in this report. On the other hand, items in "topics of continuous concern" are regarded as non-material topics, where in principle, these items will not be disclosed in this report. However, non-material topics which significantly impact material topics will still be properly explained and disclosed in this report.



Step 3: Validation

In order to ensure that the prioritization results meet the principles of completeness and stakeholder inclusiveness in GRI, THSRC's Corporate Governance Promotion Committee has adjusted the sustainable issues based on such factors as international benchmark analysis, sustainability trends, and THSRC's CSR promotion plans as follows. The results obtained after adjustment are also submitted to the Chairman and the President for review and approval.

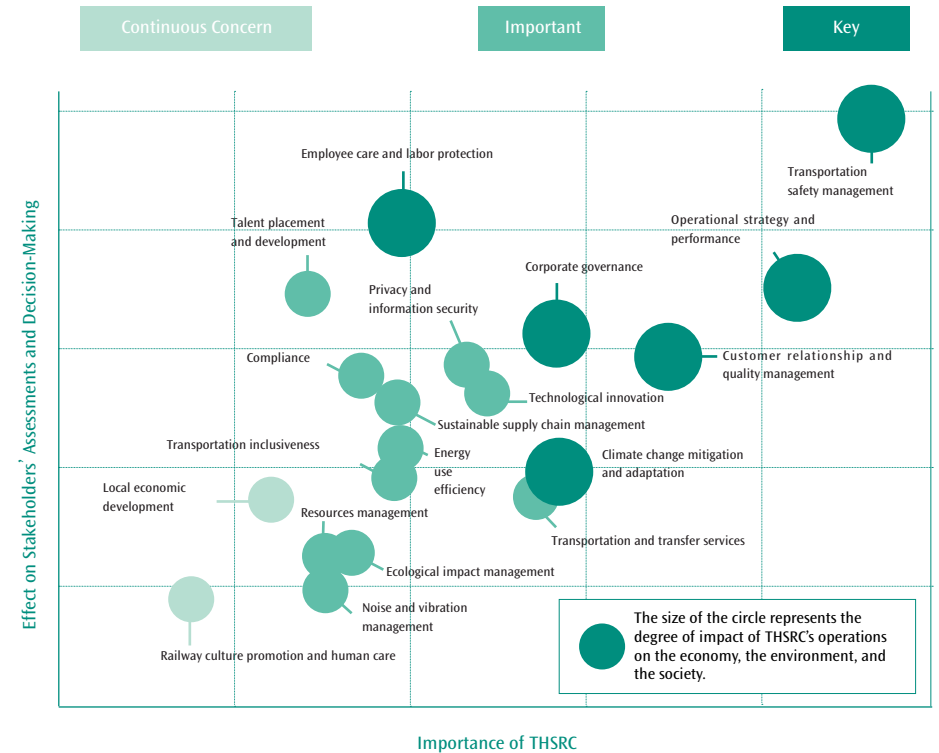
- "Climate change mitigation and adjustment:" To increase the importance of corporate operations and the impact on ESG, the materiality has been changed from an important topic to a key topic.
- "Transportation Inclusion:" To enhance the importance of corporate operations and the impact on ESG, the materiality has been changed from a topic of continuous concern to an important topic.
- "Ecological impact management:" To enhance the importance of corporate operations and the impact on ESG, the materiality has been changed from a topic of continuous focus to an important topic.
- "Railway culture promotion and human care:" To enhance the importance of corporate operations, the materiality level remains unchanged.



Step 4: Review

We will continue to practice sustainability and maintain positive communication with stakeholders. During the publication of the next report, we will review the matrix of material topics again, and plan communications with stakeholders as appropriate to confirm whether adjustments are required.

Compared with 2020, the material topics identified by THSRC in 2021 have changed slightly. As the materiality of three sustainable issues of "Noise and vibration management," "Energy use efficiency" and "Ecological impact management" have been improved, so they have been changed from a topic of continuous concern to an important topic; "local economic development" has been adjusted from an important topic to a topic of continuous concern, and the boundaries of the value chain impacted by each topic have not changed significantly.



Comparison between Material Topics and Topics in GRI Standards

■ Denotes that this node may lead to the impact resulted from material topics on the left. For details regarding related management approaches, please refer to the page numbers for the corresponding subchapters.

Materiality	Material Topics	Meaning of Materiality	ESG (E : Environmental S : Social G : Governance)	Corresponding to GRI Topic	Corresponding SDGs	Corresponding to Chapter or Subchapter	Page No	Value Chain Boundaries Impacted by Each Topic					
								Occur Directly in THSRC	Occur Through THSRC's Commercial Relationships		Occur Through THSRC's Other Direct Relationships		
								THSRC	Passengers	Suppliers and Contractors	Shareholders and Investors	Partners	Government and Competent Authorities
Key Topic	Transportation safety management	Establish and manage mechanisms and inspections related to train transportation safety to avoid accidents and violations	G	Customized material topic	SDG 9	Safety Services and Responsible Transportation	22	■		■			■
	Operational strategies and performance	Implementing operational strategies and improving performance are the foundation for sustainable operation of the Company, so as to create economic distribution that is beneficial to key stakeholders	G	GRI 201 : Economic Performance	SDG 8	Operational Performance	17	■					■
	Customer relationship and quality management	Provide high-quality products/ services to ensure that customers will get the best travel experience	G	GRI 416 : Customer Health and Safety	SDG 8 SDG 9	Smooth Travel in Adherence to Commitment	33	■		■			
	Employee care and labor protection	Plan physical and mental health protection mechanisms, reasonable remuneration and welfare measures, protection of labor conditions, and communication and grievance mechanisms for employees, in order to retain employees, and ensure the sustainable growth momentum of the Company, and reduce the rate of occupational accidents related to work injuries and diseases	S	GRI 401 : Employment GRI 402 : Labor/Management Relations GRI 403 : Occupational Health and Safety (2018) GRI 407 : Freedom of Association and Collective Bargaining	SDG 8	Operational Performance	17	■		■			
						Nurturing Talent and Value Cultivation	58						
						Protection of Rights and Considerate Care	64						
	Corporate governance	Pay attention to ethical governance and responsible business practices that comply with the market and international regulations and that are expected by stakeholders, in order to prevent losses to the company or penalties imposed by competent authorities on the Company due to unethical conduct	G	GRI 205 : Anti-corruption GRI 405 : Employee Diversity and Equal Opportunity	SDG 16	Sustainable Governance and Integrity Management	46	■		■	■		
	Climate change mitigation and adaptation	Strengthen the ability of the transportation system to respond to climate change and its readiness to cope with climate disasters, in order to ensure the safety and resilience of THSRC transportation	E	GRI 305 : Emissions	SDG 13	Low-carbon Train Operation and Environmental Sustainability	49	■		■			

Comparison between Material Topics and Topics in GRI Standards

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								Occur Directly in THSRC	Occur Through THSRC's Commercial Relationships		Occur Through THSRC's Other Direct Relationships		
								THSRC	Passengers	Suppliers and Contractors	Shareholders and Investors	Partners	Government and Competent Authorities
Important Topic	Technological innovation	The ability to provide innovative products and services to customers, in order to enhance customer satisfaction and its own market competitiveness	G	Customized material topic	SDG 9	Technology - Innovation and Technology	30	■		■			
	Traffic dispersion and transfer services	Plan train runs and transfer at stations and local transportation bases for passengers during festive periods	G	Customized material topic	SDG 9	Smooth Travel in Adherence to Commitment	27	■		■			
	Sustainable supply chain management	Formulate a good supply chain management strategy, including localized procurement and green procurement, to keep abreast of the management performance of suppliers in various aspects of sustainability, such as governance, environment, and society	G	GRI 204 : Procurement Practices GRI 414 : Supplier Social Assessment	SDG 8 SDG 17	Partner Relationship Management and Local Supply	41	■		■			■
	Talent appointment and development	Develop a complete talent development system that can help the Company accumulate transformation and innovation capabilities, in order to enhance its positive benefits in employees' career development	S	GRI 202 : Market Presence GRI 401 : Employment GRI 404 : Training and Education	SDG 4 SDG 8	Nurturing Talent and Value Cultivation	58	■					
	Privacy and Information Security Management	Keep abreast of the effectiveness of information security management and monitoring mechanisms, in order to ensure that customers' personal privacy and other relevant information are properly protected	G	GRI 418 : Customer Privacy	SDG 9	Convenience, Attentiveness, and Maintaining Relationships	33	■					
	Legal compliance	Manage, control, and follow various laws and regulations related to the environment, society, and governance, in order to prevent the negative impact of non-compliance incidents on the environment and society as identified by the laws and regulations	G	GRI 307 : Environmental Compliance GRI 416 : Customer Health and Safety GRI 417 : Marketing and Labeling GRI 419 : Socio-Economic Compliance	SDG 16	Sustainable Governance and Integrity Management	46	■		■	■	■	■
	Noise and vibration management	Reduce the noise and vibration generated during train operation to effectively reduce the impact on the environment, residents, and passengers	E	GRI 413 : Local Communities	SDG 9	Smooth Travel in Adherence to Commitment	27	■					■

Comparison between Material Topics and Topics in GRI Standards

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Materiality	Material Topics	Meaning of Materiality	ESG (E : Environmental S : Social G : Governance)	Corresponding to GRI Topic	Corresponding SDGs	Corresponding to Chapter or Subchapter	Page No	Value Chain Boundaries Impacted by Each Topic					
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								THSRC	Passengers	Suppliers and Contractors	Shareholders and Investors	Partners	Government and Competent Authorities
Important Topic	Energy use efficiency	Improve the energy use efficiency in the Company's operations, and strengthen the use of green energy to reduce the risk of the Company's reliance on fossil energy	E	GRI 302 : Energy	SDG 7	Low-carbon Train Operation and Environmental Sustainability	49	■					
	Resource management	Reduce resource consumption from the Company's operations and take active actions on recycling management to maximize resource usage	E	GRI 303 : Water and Effluents (2018) GRI 306 : Wastewater and Waste	SDG 12	Low-carbon Train Operation and Environmental Sustainability	49	■					
	Ecological impact management	Monitor air quality and prevent the release of harmful substances to maintain the ecological and conservation mechanisms around operating facilities and railway tracks, in order to prevent the negative impact on environmental quality	E	GRI 305 : Emissions	SDG 11	Carrying for Society and Developing Local Area	68	■				■	
	Transportation inclusion	Improve and optimize the quality of software and hardware services to provide ride services with quality that meet the needs of the minority or disadvantaged groups and elderly passengers	S	Customized material topic	SDG 11	Smooth Travel in Adherence to Commitment	27	■	■				
Topics of Continuous Concern	Topics of Continuous Concern	Develop sightseeing tours around the country and sell products from small farmers or specialty stores around the country on trains or at stations, in order to promote local prosperity and maintain a harmonious relationship with local communities	S	GRI 203 : Indirect Economic Impacts	SDG 8 SDG 17	Partner Relationship Management and Local Supply	41	■		■			
	Railway culture promotion and human care	Promote knowledge of Taiwan's railway system, invest in arts and culture, and promote the development of local culture in Taiwan, in order to deepen the connection between the Company and the public	S	GRI 203 : Indirect Economic Impacts	SDG 4	Carrying for Society and Developing Local Area	68	■				■	



北上 Northbound						Southbound 南下					
Train No.	Destination	Dept. Time	Plat.	Non Reserved	Route	Train No.	Destination	Dept. Time	Plat.	Non Reserved	Route
1640	Nangang	14:11	2	Car 10-12	●●●●●●●●●●●●●●●●	645	Zuoying	14:10	1	Car 10-12	●●●●●●●●●●●●●●●●
826	Nangang	14:20	2	Car 9-12	●●●●●●●●●●●●●●●●	833	Zuoying	14:34	1	Car 10-12	●●●●●●●●●●●●●●●●
642	Nangang	14:38	2	Car 9-12	●●●●●●●●●●●●●●●●	1649	Zuoying	14:43	1	Car 10-12	●●●●●●●●●●●●●●●●
1646	Nangang	15:11	2	Car 10-12	●●●●●●●●●●●●●●●●	651	Zuoying	15:10	1	Car 9-12	●●●●●●●●●●●●●●●●
830	Nangang	15:20	2	Car 9-12	●●●●●●●●●●●●●●●●	837	Zuoying	15:34	1	Car 9-12	●●●●●●●●●●●●●●●●

TIME 13:51

• The scheduled arrival time of Train 1640 bound for Nangang is 14:09 in this station. The expected c

• The scheduled arrival time of Train 645 bound for Zuoying is 14:08 in this station. The expected des

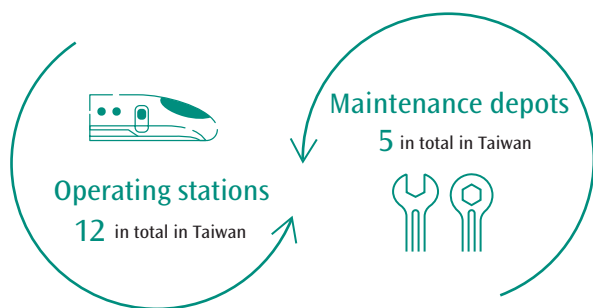
About Taiwan High Speed Rail Corporation

About Taiwan High Speed Rail Corporation

Subchapter Title	Material Topics	Management Purpose	Management Method	Assessment Mechanism	Management Performance in 2021
Operational Performance and Sustainable Practices	Operational strategies and performance	<ul style="list-style-type: none"> Achieve the goals formulated by the organization and ensure that all relevant operations are carried out in order. Manage and optimize THSRC's financial structure to lay the foundation for sustainable management, and seek maximum benefits for employees, shareholders, and creditors. At the same time, design a logo according to THSRC's corporate culture, philosophy, and spirit, demonstrate the corporate image of THSRC through visual communication, and "To be the Platform for Advancement and Enjoyment." Develop product and marketing strategies, conduct expansion plans, and track them regularly based on consumer feedback and revenue targets to improve the operational performance of THSRC actively and effectively. 	<ul style="list-style-type: none"> Adhere to the five core values of "Discipline, Integrity, Efficiency, Innovation, and Sensibility," and create the four attributes of "Real, Progressive, Passionate, and Premium" as we strive for sustainable management, in order to implement the vision and mission of THSRC. Set out the dividend policy clearly in the Company's Articles of Incorporation according to laws and regulations, in line with THSRC's business development plan, the external investment environment, capital needs and industrial competition conditions, while distributing the profits to shareholders in a stable and balanced manner based on shareholders' interests. Manage the status of assets and liabilities by having CPAs review first-, second-, and third-quarter financial statements, as well as audit and attest fourth-quarter financial statements every year. Plan the sources of capital in advance as per the changing trend in the financial market and environment with regard to the Company's future capital needs, so as to continuously reduce the debt ratio and develop sustainably. Through the analysis of THSRC's source of railway revenue based on market demand and ridership, the overall target of annual passengers is set, and the annual strategy and promotional plans are set out. Non-railway revenue comes from diverse business models, including leasing of property to stores at stations, parking space services, sales of THSRC media products, as well as sales and promotion of souvenirs. 	<ul style="list-style-type: none"> Develop four major sustainability strategies, draw up corresponding short-, medium-, and long-term goals and actions plans, and regularly track issue development and solution performance through the relevant assessment mechanisms. Dividends are distributed according to the surplus distribution plan submitted by the Board of Directors and approved by the shareholders' meeting to meet the requirements of the dividend policy specified in the Articles of Incorporation. The status of assets and liabilities disclosed in the financial statements attested or reviewed by CPAs serves as the basis for management. Confirm the performance of each project through various project strategy discussions, closure reports, and departmental meetings. 	<ul style="list-style-type: none"> The Company's debt ratio (liabilities/assets) has dropped from 85.7% at the end of 2017 to 84.2% at the end of 2021. On March 16, 2022, the Board of Directors proposed to distribute cash dividends of around NT\$4.3 billion to shareholders for 2021 to seek the best interests of employees, shareholders, and creditors. In 2021, railway revenue exceeded NT\$29.1 billion, and non-railway revenue was around NT\$1.14 billion.

Operating Bases and Services

- The THSRC began its operation in 2007, with Taiwan as an important operating base, and is headquartered in Nangang District, Taipei City.
- The total length of the THSR operating route is 350 kilometers, passing through 11 counties and cities in the west and 76 townships.



Note: Depots have different functions from stations and can be subdivided into main workshop, marshalling yard, civil engineering base and electrical engineering base, and maintenance base. At present, the maintenance depots in service include Liujia/Hsinchu, Wuri/Taichung, Taibao/Chiayi, Zuoying/Kaohsiung, and Yanchao Main Workshop/Kaohsiung; while Xizhi Depot is currently being planned.



THSRC's upstream industries mainly provide train carriages, construction services, and manufacturing and maintenance of track-related service facilities and equipment. Midstream industries include the power supply industry, transport support related to train preparation, and operators related to the provision of transfer services, including the parking lot management industry, the freeway bus industry, the car rental industry, and the taxi industry. Downstream industries comprise THSRC passengers or travel agencies, which provide T Holiday packages in collaboration with THSRC.

High Speed Rail Passenger Services

Fast, convenient, and comfortable rail transport services, while offering different types of train services, including direct train, semi-direct train, and stopping train to meet passengers' needs

Operation of Relevant Affiliated Services

Retail space leasing (e.g., convenience stores, food and beverage, and service counters), parking lots at stations, advertising sales (e.g., lightboxes, column space, wall space, product displays, and train decorations), retail, trolley sales, and others

Note: For details regarding rail transport services, please refer to the subchapter titled "Sincere Services and Intelligent Transportation."

Sustainability Strategies and Goals

THSRC Spirit and Sustainability Mission

Since the official operation in 2007, THSRC adheres to the concept of “Go Extra Mile” to continuously improve the quality of services and safety of transportation services, while adhering to five core values of “Discipline, Integrity, Efficiency, Innovation, and Sensibility” as the guiding principles for management and development. We have also devised the Strategic Planning Procedure to implement business strategies as planned.

THSRC actively responds to the concerns of different stakeholders on sustainability issues, and continues to focus on the development trend of international sustainability assessments. THSRC’s sustainability issues can be divided into governance, social, and environmental aspects: In terms of governance, we abide by laws and regulations to create maximum value for stakeholders, continue to apply technology to provide fast and convenient transport services under the principle of safety first, and continuously improve the quality of travel and customer satisfaction. Socially, for internal stakeholders, we attach importance to the safety and health of employees’ working environment and career development; for external stakeholders, we not only help the development of the rail industry in Taiwan through cooperation with the local industry, but also integrate the core industry and invest in social care to promote the overall economic development. Environmentally, our trains have low carbon, low pollution, and high efficiency features, we not only continue to promote the construction of renewable energy stations and green building public spaces to strengthen the ability to respond to climate change, but also properly manage the quality of the environment surrounding the track facilities to mitigate the impact on the environment during the operation.













In addition, as the first publicly listed company in the railway transportation industry in Taiwan, THSRC was included in the FTSE4Good Emerging Index as a constituent stock in 2018 and continued to be selected as a constituent stock of the “FTSE4Good TIP Taiwan ESG Index” from 2018 to 2021. It has also been ranked among the top 5% of the listed companies in the “Corporate Governance Evaluation” for four consecutive years. In addition, we won the “Gold Award” of the Corporate Sustainability Report Award at the “2021 14th TCSA” organized by the Taiwan Institute for Sustainable Energy, a consortium legal person. It is evident that THSRC has been deeply recognized by domestic and international investors and rating institutions in terms of operating performance, corporate governance, environment, and social responsibility.

THSRC Sustainability Strategy Blueprint













In order to take on THSRC’s sustainability mission as mentioned above, we drafted the “4T” sustainability strategy blueprint in 2017, with Transportation, Technology, Taiwan, and Touch as the four major sustainability topics, and respond to the eight UN Sustainable Development Goals (SDGs) to guide our efforts in achieving sustainability. Meanwhile, we have taken into account various policies and actions set out under Taiwan’s sustainable development goals to contribute to Taiwan’s sustainable development process. The goals of each sustainability strategy and its implementation measures in 2021 are listed as follows. The relevant details are described in the following chapters and subchapters.



THSRC Sustainability Strategies, Goals, Implementation Measures in 2021 and Corresponding SDGs

4T Component	Target	Implementation Measures in 2021	Corresponding SDGs	
			17 Goals	169 Detailed goals
 Transportation Professional Transportation	Continue to improve operational safety, actively face the impact of climate change on transportation, establish relevant early warning mechanisms, and develop relevant response measures in collaboration with the government, and actively negotiate and interact with residents along the HSR route to create positive values for the world.	<ul style="list-style-type: none"> Continued to inspect the weather resistance of the stations, equipment, and routes to ensure that the train depot meets the high flood prevention and safety standards. 		9.1
		<ul style="list-style-type: none"> Continued to improve the services, software and hardware equipment, and supporting measures for the convenience of specific groups, such as the addition of elevators at Banqiao Station and Taoyuan Station completed in 2021, the addition of rain shelters in the temporary parking and loading area at Chiayi Station, the improvement of broadcasting in the lobby on the first floor of Miaoli Station, and the improvement of the information display system at the ticket window of the station. 		11.2
		<ul style="list-style-type: none"> Continued to operate the natural disaster warning system and strengthen preventive measures for earthquakes, typhoons, heavy rain, landslide, and rock fall. In response to the incident of operation interruption due to the landslide caused by heavy rain in the Miaoli section occurred in August 2021, we re-examined whether the "disaster warning system" of each base and track is operating normally to ensure that our operating areas meet the operational safety standards. 		13.1
		<ul style="list-style-type: none"> Sales executives at each station participated in activities from time to time, and continuously communicated with local opinion leaders and residents along the HSR line. 		17.17
 Technology Innovative Technology	Actively innovate and enhance technical capabilities, adopt new technologies and promote smart transportation, continue to improve the efficiency and quality of operations, services, safety, and emergency response, as well as adopt big data and digitalization to optimize customer experience and create a more convenient life.	<ul style="list-style-type: none"> Monitored train running status in real time via IoT facilities. 		9.1
		<ul style="list-style-type: none"> Continued to promote the employee proposal improvement system and quality control circle activities. The best performance improvement cases in 2021 were "improving the reliability of core computer room air-conditioning equipment and reducing maintenance costs" and "Chemicals Management System." 		8.3
		<ul style="list-style-type: none"> Provided ticket purchase services for senior and disabled concession tickets via ticket sales channels to provide passengers with a diverse range of ticket purchase and pick-up channels. 		11.2
		<ul style="list-style-type: none"> Continued to enhance the scope of use of mobile payment via e-wallets In 2021, the number of tickets purchased using the T-EX App had reached 17.18 million. In 2021, the percentage of using paperless tickets (including T-EX mobile ticketing app, periodic/multi-ride tickets, and co-branded cards with electronic ticketing function) was 37%. 		12.2、12.5
 Taiwan Enhancing Local Connection	Actively nurture local talents and establish industry-academia collaboration, strive to create opportunities for diverse products and different industries through our business model, become the platform for advancement and enjoyment locally, and promote the prosperity and development of local industries by fostering the development capabilities of the local railway industry. At the same time, establish a sustainable supply chain management mechanism, and become the leader which guides the railway industry to sustainability.	<ul style="list-style-type: none"> Established collaboration with colleges and universities, and promoted talent cultivation in Taiwan's railway industry through industry-academia collaboration and internship programs, where a total of 30 students were accepted into our internship program for the academic year of 2021, providing a one-year station work internship opportunity. 		4.4

THSRC Sustainability Strategies, Goals, Implementation Measures in 2021 and Corresponding SDGs

4T Component	Target	Implementation Measures in 2021	Corresponding SDGs	
			17 Goals	169 Detailed goals
 Taiwan Enhancing Local Connection	Actively nurture local talents and establish industry-academia collaboration, strive to create opportunities for diverse products and different industries through our business model, become the platform for advancement and enjoyment locally, and promote the prosperity and development of local industries by fostering the development capabilities of the local railway industry. At the same time, establish a sustainable supply chain management mechanism, and become the leader which guides the railway industry to sustainability.	<ul style="list-style-type: none"> Actively promoted local supply and enhanced the capabilities of local vendors. Provided equal employment opportunities through talent recruitment and cultivation. Enhanced the professional competencies of personnel based on assessment and training. Launched a series of products and promotional activities related to the "Journey with THSR, Discover Taiwan" initiative in cooperation with the government, travel agencies, hotels, MRT, freeway bus operators, and event organizers, and launched the "Quintuple Stimulus Vouchers" program in September in response to the government's initiative. Committed to creating local employment opportunities, and supporting local businesses with lower rents to set up THSRC markets or product museums in eight HSR stations to promote products produced using local raw materials. 	 8	8.3、8.5 8.6、8.9
		<ul style="list-style-type: none"> Marketed various attractions in Taiwan through THSR to promote tourism benefits and the development of the local tourism industry, with the number of passengers reaching 1.473 million people throughout the year. 	 12	12.b
		<ul style="list-style-type: none"> Joined the International Union of Railways (UIC) since 2009 and tracked weather items on the NAZCA platform under UIC and the United Nations Framework Convention on Climate Change (UNFCCC).^(note) 	 17	17.16
 Touch Sustainable Care	Comprehensively improve the corporate social responsibility governance mechanism, and strengthen the integration of governance and sustainable development by incorporating the corporate social responsibility vision into the corporate culture. In addition, promote employee development, implement energy conservation and carbon reduction to create positive environmental benefits, and at the same time actively support charity events, arts, and ecological development as an important platform for strengthening the cohesion of Taiwan's society.	<ul style="list-style-type: none"> Organized the "High-Speed Educational Endowment Program" in collaboration with the "Down Syndrome Foundation R.O.C." by inviting THSRC passengers and the public to pay attention to early intervention for developmentally delayed children in rural areas. Organized "HSR Camps" to enhance the knowledge about railway of participants at all school ages so as to train potential excellent railway talents. 	 4	4.1
		<ul style="list-style-type: none"> Leased out the rooftop of the maintenance depots, the detention basins, and the outdoor car parking spaces and their rooftop outside each station to energy suppliers for the installation of solar power equipment in line with the government's effort to promote renewable energy. The annual power generated reached 11,657.015 MWh in 2021. Obtained 219 renewable energy certificates. 	 7	7.2、7.b
		<ul style="list-style-type: none"> Continued to promote the operation of the Corporate Governance Promotion Committee to develop strategies for optimizing corporate governance systems and functions, and review the Corporate Social Responsibility Policy. 	 8	8.9
		<ul style="list-style-type: none"> Established collaboration with educational and charitable organizations in various places in order to help disadvantaged groups fulfill their dreams of taking the THSR train for free, where a total of 9 disadvantaged groups and 1,701 people had participated in the "THSRC Smiling Train Charity Program" in 2021 cumulatively. 	 11	11.2
		<ul style="list-style-type: none"> Implemented relevant energy conservation programs and measures, and continued to optimize equipment to improve the effectiveness of energy management. 	 9	9.1、9.4
		<ul style="list-style-type: none"> Monitored weather information in collaboration with the government and professional organizations. 	 13	13.2
		<ul style="list-style-type: none"> Reduced the impact of public transportation on the environment through energy resource management and waste recycling mechanisms. Increased the procurement of eco-friendly products to reduce the impact of supply chain on the environment. 	 12	12.5、12.7

Note: Jointly committed to reducing carbon emissions by 50% by 2030 and 75% by 2050 based on the carbon emission levels in 1990.

Operational Performance

Financial Performance

Items	Unit	2019	2020	2021
Sales Volume (Rail Transport)	Thousands of passenger-km	11,994,453	9,912,062	7,568,788
Sales Value				
Rail Transport	NT\$ thousands	46,107,656	37,903,849	29,084,574
Sales Revenue	NT\$ thousands	210,947	132,516	72,463
Other Income such as Rent	NT\$ thousands	1,188,787	1,100,840	1,070,850
Operating Ratios				
Rail Transport	%	97.05	96.85	96.22
Sales Revenue	%	0.45	0.34	0.24
Other Income such as Rent	%	2.50	2.81	3.54
EBITDA and EBTDA				
EBITDA	NT\$ thousands	34,513,097	25,982,260	17,576,551
EBTDA	NT\$ thousands	28,221,173	20,197,897	11,914,740
Turnover and Profitability				
Operating Revenue (IFRS)	NT\$ thousands	47,507,390	39,137,205	30,227,887
Gross Profit	NT\$ thousands	21,744,703	13,042,151	4,525,557
Net Operating Margin	NT\$ thousands	20,511,953	11,806,685	3,317,882
Net Income before Tax	NT\$ thousands	7,775,108	5,419,311	4,265,625
Net Income after Tax	NT\$ thousands	8,007,033	5,843,037	3,610,922
Assets, Liabilities and Equity				
Total Assets	NT\$ thousands	443,059,602	427,566,970	427,907,041
Total Liabilities	NT\$ thousands	371,982,333	357,480,314	360,129,070
Total Equity	NT\$ thousands	71,077,269	70,086,656	67,777,971

Notes: 1. EBITDA : Earnings Before Interest, Taxes, Depreciation and Amortization.
2. EBTDA : Earnings Before Taxes, Depreciation and Amortization.

Economic Value Distribution



Unit: NT\$ thousands

	Remarks		2019	2020	2021
Operating Costs	Cash outlays that occur outside the organization for the purchase of raw materials, product parts, site facilities, and services	Operating Costs (total)	25,762,687	26,095,054	25,702,330
		Operating Expenses (total)	1,232,750	1,235,466	1,207,675
Employee Salaries and Benefits	Including total salary, as well as the amount paid to the government on behalf of employees, periodic contributions, and other employee subsidies		4,960,132	5,116,114	5,007,895
Dividend Payout	Dividends paid to all shareholders		6,810,797	5,909,708	(Note 1) 4,266,246
Interest Payment	Interests paid to lenders		6,454,624	5,919,211	5,757,241
Payments to the Government	All taxes and penalties paid by the organization at international, domestic, and regional levels	(Note 2) Taxes	2,182,443	1,430,888	1,194,405
		(Note 3) Profit Sharing Payments	731,182	777,511	541,931
		(Note 3) Rental Expenses	834,382	829,224	827,691
		(Note 3) Stabilization Expenses	—	6,084,658	—
Community Investment	Voluntary donations and investments whose target beneficiaries are non-organizational external units		16,905	1,990	15,071

Notes: 1. The Company's dividend distribution plan for 2021 was approved in the annual shareholders' meeting convened in 2022.
2. Government tax payments include business tax, profit-seeking enterprise income tax, and other taxes. Due to the impact of "Coronavirus disease 2019" (hereinafter referred to as COVID-19), the Company applied for deferred payment for profit-seeking enterprise income tax for 2019 and the tax on undistributed surplus for 2018, both of which had been paid in 2021. The profit-seeking enterprise income tax for 2020 and the tax on undistributed surplus for 2019 will be paid in 2022.
3. It is the amount paid by THSRC in accordance with the "Taiwan North-South High Speed Rail Construction and Operation Agreement" signed with the Ministry of Transportation and Communications (MOTC).

Government Subsidies

Unit: NT\$ thousands

Type	Purpose/Description	2019	2020	2021
 Tax Deduction and Credit (Tax Amount)	Tax credit applicable to capital expenditures invested in personnel training specified in Article 29 of the "Statute for Encouragement of Private Participation in Transportation Infrastructure Projects"	3,687	3,829	2,326
	Tax credit applicable to capital expenditures invested in R&D specified in Article 29 of the "Statute for Encouragement of Private Participation in Transportation Infrastructure Projects"	2,627	16,484	2,702
	Five-year tax exemption specified in Article 28 of the "Statute for Encouragement of Private Participation in Transportation Infrastructure Projects" (Note 1)	2,841,840	3,119,694	391,045
	Tax credit applicable to investment in smart machinery specified in Article 10-1 of the "Statute for Industrial Innovation" (Note 2)	—	6,010	11,588
	Tax credit applicable to undistributed surplus as in the substantive investment specified in Article 23-3 of the "Statute for Industrial Innovation" (Note 2)	—	119,559	17,822
 Investment Subsidies, Research and Development Subsidies, and Other Related Subsidies	Subsidy program for Smart Urban and Rural Life Application (Innovative Service Program) - THSRC Wi-Fi Service Experience Improvement Project issued by the Industrial Development Bureau, Ministry of Economic Affairs	933	8,654	—
	Subsidy of Department of Economic Affairs, Taipei City Government for the replacement of energy-saving equipment and the replacement of smart energy-saving systems for the service industry in Taipei City	—	—	2,000
	Subsidy program for residential and commercial electricity saving in Taichung City issued by the Economic Development Bureau, Taichung City Government	—	—	508
	COVID-19 relief subsidy (Note 3)	—	190,095	94,331

Notes: 1. The Company applied for a five-year tax exemption from profit-seeking enterprise income tax in accordance with Article 28 of the "Statute for Encouragement of Private Participation in Transportation Infrastructure Projects." On April 13, 2018, exemption from profit-seeking enterprise income tax for this case was approved by the Ministry of Finance, and the scope of tax exemption was determined in accordance with ticket revenue for passenger transport and transportation income for cargoes specified in Subparagraph 1, Paragraph 1, Article 3 of the "Regulations Governing Application of Profit-seeking Enterprise Income Tax Exemption to Private Institutions Participating in Transportation and Communication Infrastructure Projects." In addition, the Company has chosen to delay the commencement of tax exemption period to January 1, 2017 for exemption from profit-seeking enterprise income tax for five consecutive years within the scope of statutory tax exemption in accordance with Paragraph 2, Article 28 of the "Statute for Encouragement of Private Participation in Transportation Infrastructure Projects."

2. The Company applied the application for the tax incentives in 2020 in accordance with Article 10-1 and Article 23-3 of the amended "Statute for Industrial Innovation."

3. The Company applied to the government for and obtained relief subsidies such as the reduction of electricity bills and rent concessions due to the novel coronavirus disease.

Operating Performance

Profile Disclosure	Unit	2019	2020	2021
 Number of Train Services	times	53,727	53,076	46,792
 Passenger Volume	thousands	67,411	57,239	43,460
 Punctuality Rate (Arrival Within Five Minutes of Scheduled Time, Including Delays Due to Weather Condition)	%	99.88	99.71	99.00
 Reliability Rate (Including Delays Due to Weather Condition)	%	100	100	100
 Average Delay Time for Arrival at Terminal Station	minutes	0.069	0.128	0.287

Financial Performance in 2021

On the basis of sustainable operation, THSRC continues to optimize its financial structure and corporate governance performance. Since it was listed on the stock market, it has been included in the MSCI Taiwan Index, the FTSE TWSE Taiwan 50 Index, the TWSE Corporate Governance 100 Index, and the TWSE RA Taiwan Employment Creation 99 Index, and the FTSE4Good Emerging Index as a constituent stock. In 2021, it was once again selected as a constituent stock of the "FTSE4Good TIP Taiwan ESG Index" and was awarded an exclusive badge certificate. This has demonstrated that THSRC is committed to improving its performance in sustainable development.

Performance Highlights

- In 2021, THSRC's annual revenue was NT\$30.2 billion, with a net income after tax of NT\$3.6 billion. Due to the impact of COVID-19 on the passenger traffic, the revenue and profit decreased by 22.8% and 38.2%, respectively, compared with those in 2020.
- Despite the impact of the pandemic, THSRC continued to implement measures to reduce capital costs in 2021, and the annual interest expense was NT\$5.76 billion.

Action Plan

- Successfully amended the syndicated loan agreement conditions through negotiation with the group of banks to reduce the amount contributed to the reserve account and to adjust the early prepayment method, which improved THSRC's efficiency in the use of funds.
- Early prepaid the principal of Tranche A Facility under a syndicated loan agreement in the amounts of NT\$15 billion in December 2021 to save interest expenses.
- The issue of unsecured corporate bonds was completed in July 2021, among which bond A was issued with the issue period of 3 years at a fixed annual interest rate of 0.32% with the issue amount of NT\$4 billion; while bond B was issued with the issue period of 4 years at a fixed annual interest rate of 0.35% with the issue amount of NT\$4 billion. This aims to reduce the risk of interest rate volatility and diversify funding channels, so as to provide THSRC with stable and low-interest funds, thereby creating greater value for shareholders.
- The issue of 3-year unsecured corporate bonds was completed in August 2021 at a fixed annual interest rate of 0.30% with the issue amount of NT\$1 billion. This bond has been recognized as a sustainability bonds. In order to support the Company to implement the concept and policy of sustainable management, promote the green investment plan of "building automated equipment at Yanchao Main Depot;" and the social benefit investment plan of "upgrading the passenger information system of stations," the funds raised are expected to be invested in pollution prevention and control, affordable basic living facilities and other categories, which will have a positive contribution to environmental protection, the Company's overall image and long-term operation and development. It is expected that the issue of sustainability bonds can deepen and implement the objectives and scope of actions, and effectively promote and implement THSRC's sustainability concept.

"Coronavirus disease 2019" Prevention Measures in 2021

In 2021, in response to the escalating COVID-19, in addition to actively cooperating with the pandemic prevention policy, THSRC also implemented pandemic prevention measures to balance normal operations and employee health and safety. The Company has set up a company-level COVID-19 response team in accordance with the major infectious disease response management measures to promote pandemic prevention measures for operations, stations, and internal employees. By implementing such measures as the socially-distant seating arrangement logic for pandemic prevention, formulation of social distancing guidelines, and adjustment to the catering sales of merchants in the station, THSRC provided passengers with a safe riding environment. Anti-pandemic actions such as staff divisions, group shifts, conducting business and meetings via video, and refusing external visitors were taken to ensure the continuous operation of the THSRC, and safeguard the health rights and interests of employees.



THSRC personnel are engaging in pandemic prevention operations



THSRC personnel are engaging in pandemic prevention operations

The COVID-19 has impacted the ridership of THSR, but has not had a significant impact on the operating conditions. The Company continues to face the epidemic crisis with comprehensive pandemic prevention measures, and regards safeguarding the health and safety of passengers as the primary responsibility of THSRC. For the latest pandemic prevention measures and ticketing instructions for trains, stations, and operational services, please refer to the section dedicated to COVID-19 on the THSRC website.



Transportation

Professional Transportation

Transportation

Professional Transportation

Subchapter Title	Material Topics	Management Purpose	Management Method	Assessment Mechanism	Management Performance in 2021
Safety Services and Responsible Transportation	Transportation safety management	Ensure the travel safety of every passenger and other members of the public, and maintain THSRC's high-quality safety culture.	<ul style="list-style-type: none"> Develop "Operation Safety Plan - Safety Management System" as the safety regulation at the highest level, and integrates the Plan-Do-Check-Act (P-D-C-A) circulation principles, thereby effectively achieving the policy goals of THSRC through the implementation and continuous improvement of 12 safety management elements. Establish the Safety Committee covering different levels and functions to manage issues such as reviewing safety performance, verifying the implementation of safety management, etc. 	<ul style="list-style-type: none"> Perform audit to examine whether the implementation of safety management meets specific standards, assess whether each unit has fulfilled its safety responsibilities and carry out its functions according to the relevant regulations, and confirm the effective and continuous operation of the system. The relevant safety committee regularly reviews safety performance and the implementation of safety management. 	<ul style="list-style-type: none"> Maintained "zero" train accident in 2021. Passenger safety performance reached the set permissible target. The target value for fatalities and serious injuries was zero, and the actual value was zero; the target value of the passenger/public minor injuries with the responsibilities attributed to THSRC was 0.06 person per million trips, and the actual value was 0.14 (the lower the minor injury value, the better).
Disaster Prevention with Professional Response		Ensure that the safety and quality of THSR train services are not affected by natural disasters and man-made disasters.	<ul style="list-style-type: none"> Establish internal plans, regulations, and standard operating procedures for disaster responses in accordance with the laws and regulations related to disaster prevention and fire prevention, and formulate the "Taiwan High Speed Rail Overall Disaster Prevention and Response Plan" to establish an overall framework for natural disaster and man-made disaster management; and the Safety Committee regularly supervises, reviews, and manages abnormal events in train services caused by natural disasters. 	<ul style="list-style-type: none"> Formulate training programs every year to conduct drills regularly and without warning for various hypothetical scenarios, and assess how familiar our colleagues at all levels are with various emergency procedures and the effectiveness of related plans and regulations. 	<ul style="list-style-type: none"> No passenger was injured due to natural disasters in 2021. Completed 87 drills in 2021. Including Coronavirus disease 2019 (hereinafter referred to as the COVID-19) business continuity plan drills.
Smooth Travel in Adherence to Promises	Traffic dispersion and transfer services	Draw up traffic management measures in the station area and the plan to increase the transportation frequency to maximize the capacity and efficiency of the transfer, so as to continue to provide passengers with fast and convenient transfer services.	<ul style="list-style-type: none"> Participate in central and local government traffic dispersion coordination meetings to confirm that traffic management plans meet the needs of passengers and HSR stations; and plan taxi scheduling and the increase of the frequency of express bus services in advance to ensure flexible scheduling, and adjust the train maintenance schedule and frequency. 	<ul style="list-style-type: none"> Assess the need and feasibility of the increase of frequency of the transfer services through express bus passenger statistics, taxi scheduling and shortage statistics, as well as customer feedback and grievance channels. After completing the traffic dispersion operation, analyze the difference between the actual ridership and the estimated demand, and review the actual performance of the trains carrying passengers (ridership and occupancy rate) in each period, as a reference for subsequent traffic dispersion planning. 	<ul style="list-style-type: none"> The number of express bus trips in 2021 totaled 397,870, including 2,652 additional trips during long-weekend holidays for passenger traffic dispersion. The number of scheduled taxi trips exceeded 2.32 million in 2021.
	Transportation inclusion	Improve and optimize the quality of software and hardware services to meet the needs of minority or disadvantaged groups, particularly elderly passengers.	<ul style="list-style-type: none"> Continue to follow up on the injuries of elderly passengers in THSR's service areas (such as stations and trains) from 2021, and conduct regular statistical analysis for review and improvement. Transportation friendliness-related plans include: <ol style="list-style-type: none"> Set up accessible ticket counters/ticket gates/toilets and elevators, and other passenger-friendly facilities. Provide guidance services to assist elderly or physically challenged passengers. Car 7 is designed as an accessible car, and four seats are reserved for physically challenged passengers' companions to take care of the physically challenged passengers. 	<ul style="list-style-type: none"> Make further review and improvement based on customer feedback and satisfaction survey results. 	<ul style="list-style-type: none"> Completed the addition of elevators at Banqiao Station and Taoyuan Station, the addition of rain shields in the temporary parking and loading area at Chiayi Station, the improvement of broadcasting in the lobby on the first floor of Miaoli Station, and the improvement of the information display system at the ticket window of the station in 2021. A total of 58,501 passengers received the guidance services in 2021.
	Noise and vibration management	Effectively reduce the noise and vibration generated during operation, and mitigate the impact on the environment, residents and passengers through preventive measures.	<ul style="list-style-type: none"> Formulate the "High Speed Rail Noise Improvement Plan" and the "Work Plan for Noise Prevention and Improvement among Sporadic Households along the High Speed Rail Line." Continue to carry out environmental monitoring operations according to the commitment of environmental assessment, and send the monitoring results to the Environmental Protection Administration for reference. 	<ul style="list-style-type: none"> Establish the "High Speed Rail Noise Case Handling Process," set up a "Noise Prevention Project Team," and propose improvement plans according to the needs of the case to properly handle noise complaints. 	<ul style="list-style-type: none"> There was only one incident of violation of noise standards in 2021, which has been properly handled by the project team, and a noise improvement plan has been submitted (the Noise Prevention Project Team submitted the noise improvement plan review on February 14, 2022, and the Environmental Protection Administration issued a letter on May 16 to agree to take it for future reference).

Safety Services and Responsible Transportation

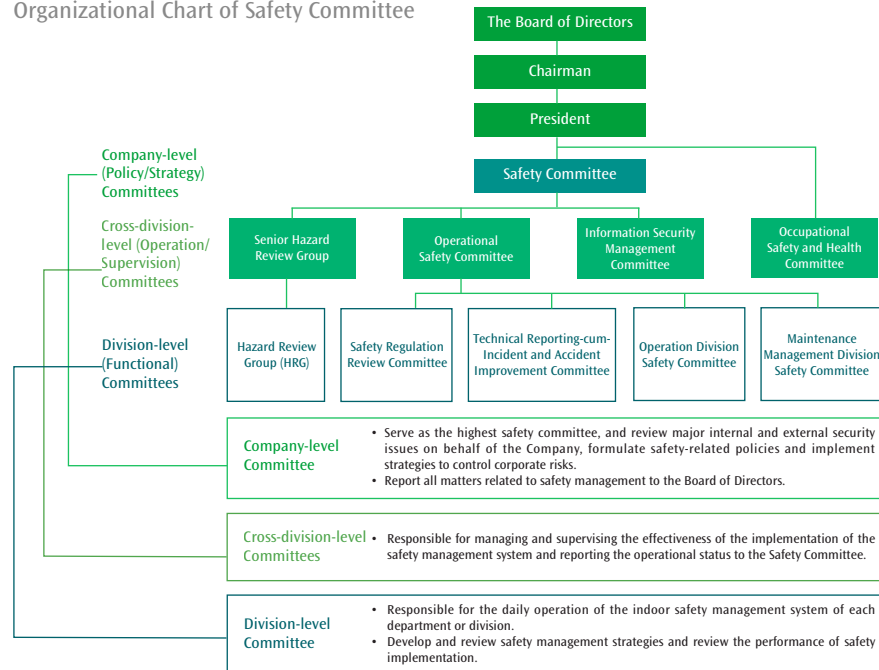
Safety is the operating principle and core value of THSRC, and is also the responsibility and commitment to every passenger. We monitor operational safety through a sound management structure and continue to consolidate the culture of safety first. During the 14 years of operation, we have always maintained zero operation accident. In 2021, the average daily ridership of THSR reached nearly 119,000 passengers, the train punctuality rate reached 99.00%, and the average delay time was only around 0.287 minutes. We provide a reliable high-speed rail travel services.

Safety Management and Culture

Dedicated Safety Management Framework

In order to ensure the safety of THSRC's operating environment, the Company has set up safety committees at three levels to formulate prudent safety policies and implementation plans, and regularly report significant issues related to operational safety to the Board of Directors. The operational committees and functional committees execute strategies to enable each employee to understand and abide by the Company's safety regulations. In addition, the employee work instructions stipulate that employees shall be assigned the management or execution responsibilities as per their job rankings to thoroughly implement safety management measures and shape a safety-oriented operating culture.

Organizational Chart of Safety Committee



Note: 1. The Company-level Safety Committee convenes a meeting every six months. The Occupational Safety and Health Committee, as well as the Operational Safety Committee and the Information Safety Management Committee at cross-division-level convene a meeting every quarter. The Operation Division Committee, the Maintenance Management Division Safety Committee at division-level, and the Hazard Review Group (HRG) convene a meeting every month. The "Safety Regulation Review Committee" and the "Technical Reporting-cum-Incident and Accident Improvement Committee" decide whether to convene meetings depending on the occurrence of the incident, with no fixed frequency of such meetings.

2. The Occupational Safety and Health Committee is parallel to other safety committees, and is tightly connected to employee safety. For more details, please refer to the sub-chapter titled "Protection of Rights and Considerate Care."

Operational Safety Mechanisms and Plans

The THSRC's operational safety management mechanism centers on risk management. We properly use internationally recognized risk assessment and safety management methods to ensure that all sections are accurately implemented as per operating procedures. We also regularly review domestic and international major issues concerning railway operation safety from the aspects of laws and regulations, system transportation, extreme disasters, safety management, and security every quarter, and submit reports to the Operational Safety Committee for review.

THSRC regards the "Operation Safety Plan" as the highest safety management guidelines, which has incorporated a total of 12 safety management elements including safety policies. The railway maintenance, THSR operation system, and relevant new business development or execution are integrated to effectively achieve THSRC's goal of safety first through the Plan-Do-Check-Act (P-D-C-A) circulation principle.



Safety Culture Promotion and Communication

In order to strengthen the protection concept of THSRC colleagues and partners on THSRC as a critical infrastructure, we held "High Speed Rail Critical Infrastructure Protection and New Threat" seminar in December 2021 to promote exchanges and communication among colleagues in various units, and jointly shape safety awareness. A total of 38 students participated in this seminar, including front-line maintenance supervisors and controllers. We hope that the overall protection preparation and emergency response capabilities of THSR will be effectively improved through the sharing of experts and the safety culture of cross-unit discussions, and the safety quality will be continuously improved, in order to face the new threats and challenges in the future.



"High Speed Rail Critical Infrastructure Protection and New Threats" seminar in 2021

In addition, in order to communicate with the public about THSRC's focus on operational safety, we held a total of two transportation safety media interviews and visits in 2021 to showcase our results in the implementation of various operational safety measures and services. The topics included the special inspection during Lunar New Year and train attendant talent training and test.



Special inspection and pantograph replacement operation during Lunar New Year at Zuoying Depot



Train attendant training and test

In addition, in order to ensure the operational safety of THSR and improve human management, THSRC invited external lecturers to teach the course of “Human Factor Cause Analysis and Improvement - Examples of Advanced Industries” in December 2021. In this internal operation safety training course, lecturers from New York State, USA were invited to conduct training and exchange experience with colleagues through video conferencing. They examine safety data from various perspectives such as physical, cognitive and organizational human factors, and adopt human factors analysis theory and framework to evaluate daily operation and safety with the assistance of risk index control and safety risk prediction model. With the advanced development of science and technology, the human factor in transportation safety management is becoming more and more important. The scientific management method covering both theory and practice will help THSRC to create a safer operating area.

Station and Route Safety and Risk Management

Maintaining the smooth operation of tracks is the core of safety management of THSRC. Our track maintenance personnel perform routine inspections after daily train operations. In addition to routine track inspections, daily maintenance and examination of THSR facilities includes stations, trains, mechanical and electrical facilities, civil structures, and route safety, which covers the safety inspection of various facilities. The actual safety inspection performance in 2021 includes a total of 1,800 turnout inspections, and routine track inspections and track irregularity inspections of 8,241 kilometers.

Train Inspection and Maintenance Performance in 2021

Type	Cycle	Number of Trainsets Maintained
Daily Inspection	Every 2 days	5,143 trainsets
Monthly Inspection	Every 30 days or 30,000 km	579 trainsets
Bogie Inspection	Every 18 months or 600,000 km	27 trainsets
General Inspection	Every 36 months or 1.2 million km	13 trainsets

Note: In 2021, due to the impact of COVID-19, the operating mileage was reduced, so the number of trainsets maintained was lower than that in 2020.

Other Railway Maintenance Management Plans

Safety Actions	Adopt management systems, labor safety and hazard management mechanisms, employee safety training, and internal/external professional training to enhance safety awareness and professionalism.
Operations and Measures	Purchase track advanced maintenance/testing equipment, engage in domestic development of rail equipment/spare parts, conduct technical exchanges and improvements in the track industry, and provide track's professional training.
Professional Technologies	Adopt track alignment measurement, optical track measurement, visual track inspection, train waving automatic measurement system, ultrasonic rail testing, rail and turnout grinding, and rail lubrication technique.

In order to implement risk management and control, THSRC has set up a Hazard Review Group (HRG), which is composed of members from various professional fields in the Company. It holds a monthly regular meeting to review hazard information and identify hazard risks while confirming whether appropriate procedures and technologies are implemented so as to put forth countermeasures to mitigate such risks. By the end of 2021, the hazard risk levels identified by the HRG meetings all fell within the risk tolerance range.

In April 2021, a serious accident of the Taiwan Railway Taroko Express occurred due to the slipping of a maintenance vehicle, prompting THSRC to re-examine the regulations for projects along the track, and conduct inventory audits of the laws and regulations, construction management and equipment monitoring, as well as enforcement measures for inspections and drills. After reviewing various safety management measures, THSR's prevailing norms can effectively prevent man-made accidents. The description of the implementation measures inspection for each aspect is as follows:

Specification	Implementation Measures
Laws and Regulations	Whether the construction along the line affects the operation of the THSR shall be strictly assessed in accordance with the railway laws and regulations to ensure the safety of THSR train services.
Construction Management	<ul style="list-style-type: none"> The construction unit shall submit a construction plan, explaining the required safety protection measures, emergency response plans, etc., which can only be implemented upon joint review and approval of all relevant departments. Effective construction protection fences shall be added during construction to prevent construction materials, equipment and personnel from intrusion into the track area. Construction personnel should participate in the Company's safety training and obtain qualifications, and enter and leave the THSRC control area upon authorization by the Operational Control Center (OCC), and strictly abide by the relevant operating regulations. OCC will set a temporary operation speed limit for trains based on operational needs, and require the on-site supervisors to wear a train radio to immediately notify any situation that may affect the safety of THSR train services.
Device Monitoring	Alarm detection facilities for landslide, rock fall and intrusion are set up, once the detection meter is activated, an alarm will be immediately issued, and all trains in the affected section will be automatically forced to brake.
Inspections and Drills	<ul style="list-style-type: none"> Each construction business management unit will send personnel on site to confirm and check whether the safety operation is accurate, and the safety department will also visit the site from time to time. THSRC cooperates with various external supporting units to discuss joint disaster relief operations at the station, and jointly survey 184 emergency escape exits along the entire HSR line every year. THSRC cooperates with contractors to conduct disaster notification and response drills such as rock fall at the entrance of tunnels or landslide of the route every year, and conducted a total of 2 related drills in 2021.

■ On April 1, 2022, due to the construction outage of Southeast Cement, Taipower's 69 KV transmission line was disconnected and fell directly above the main HSR line, resulting in abnormal power supply, and affecting the operation of the section between Tainan Station and Zuoying Station. THSRC immediately established an emergency response center to change the operating interval from Nangang Station to Tainan Station, and start the shuttle services between Tainan Station and Zuoying Station. In response to this outage, THSRC used the overhead catenary system maintenance vehicle with aerial work baskets and pull ladders to conduct emergency repairs. With the cooperation of Taipower and Taiwan Railway, the two-way traffic operation was resumed at 22:40 that night, and two additional trains were opened from Zuoying Station to Nangang Station. All non-reserved seat (excluding business car) trains stopped at each station for passengers to return to their hometowns for the festival.

■ According to the “Passenger Transportation Contract,” this abnormal event is not attributed to THSRC and natural disasters. Initially, passengers are not subject to the delayed refund policy between Tainan Station and Zuoying Station. However, considering the impact of the incident, if the ticket includes the itinerary between Tainan Station and Zuoying Station, after taking the shuttle bus, passengers can still refund the fare for the section not taken within one year. In response to this incident which affects the safety of THSR's operations and causes travel delays for passengers, THSRC will discuss follow-up claims, and the progress of relevant drills or preventive actions will be disclosed in the THSRC Sustainability Report for 2022.

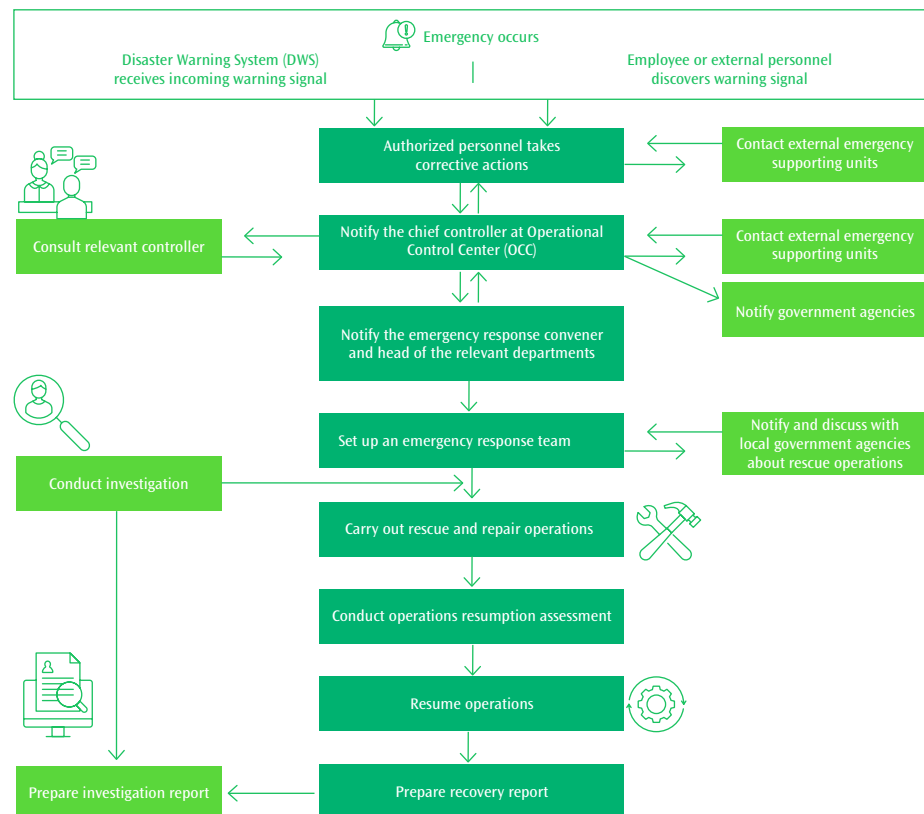
Disaster Prevention with Professional Response

Train Safety and Disaster Prevention and Response

Factors affecting the safety of THSR trains can be divided into three categories, including: natural factors, human factors, and equipment abnormality (see the table below). The Company plans overall prevention and response measures in accordance with three major categories of disasters, and at the same time formulates emergency response procedures to respond to actual disaster events, and takes various improvement actions and restoration operations through cooperation between internal and external units, taking the safety of passengers and personnel as the primary consideration.

Natural Factors	Earthquake, typhoon, heavy rain, landslide, rock fall, etc.
Human Factors	Destruction of equipment, arson, explosives, violent attacks, hijacking, etc.
Equipment Abnormality	Signal system failure, turnout failure, train bogie failure, low hanging power lines, etc.

Emergency Response Flow Chart for Various Disasters



Natural Factors - Natural Disaster Prevention and Response Mechanism

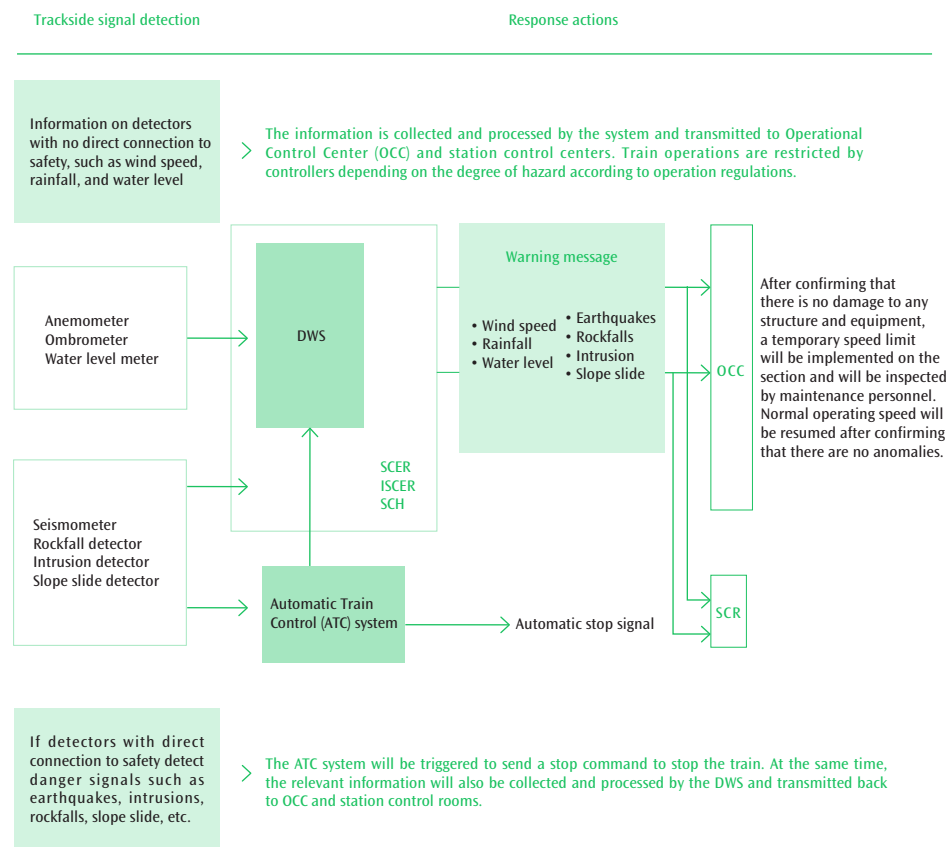
THSRC has adopted relevant laws and regulations on disaster prevention and fire safety as the basis for the formulation of internal plans and measures, and each station or depot implements various disaster prevention tasks as per the internal plans. The standard operating procedures for disaster response are also independently inspected for safety by international experts in the final inspection phase to ensure that the procedures can cope with various potential disasters that affect transportation safety.

Natural Disaster Prevention Measures

Type of Prevention	Position of Prevention	Content of Prevention Measures
Passive Prevention	Station facilities and operating trains	Construct station facilities and operating trains using fire-retardant, fire-resistant, low-smoke, and non-toxic materials according to fire prevention and environmental protection regulations, as well as regulations of the US National Fire Protection Association
Predicted or Knowable Disaster Prevention	THSR operation sites and operating trains	<ul style="list-style-type: none"> Initiate typhoon/rain prevention preparations in advance through interpretation of typhoon/heavy rain warnings and weather information Formulate the "Overall Disaster Prevention and Response Plan for Taiwan High Speed Rail Traffic Accidents" with the Ministry of Transportation and Communications (MOTC), and establish supporting and assistance mechanisms with central and local rescue units
Detection and Prevention along Operating Routes	Operating trains	Install natural disaster warning detectors along the HSR line, which are directly connected to the automatic train control system and can automatically stop trains immediately if there are earthquakes, landslide, and rock falls that directly affect train safety
Earthquake Prevention for Civil Structural Facilities	Elevated bridges, tunnels, and flat sections	The seismic strength of civil structures is designed with a 950-year return period to ensure operational safety

There is a "Disaster Warning System (DWS)" along the line of the THSR. In case an earthquake, foreign object intrusion, landslide, rock falls, or other dangerous signals directly related to safety are detected, it will trigger the automatic train control system to send a stop command to stop the train. The earthquake detector in the system can also accurately monitor the earthquake's range in each region to ensure safe travel. In the Miaoli landslide and earthquake events in 2021, the DWS will play the function of disaster warning, send automatic stop signals in time, and return disaster information to OCC.

DWS Framework



Notes: 1. SCER: Signaling and Communication Equipment Room
2. ISCR: Intermediate Signaling and Communication Equipment Room
3. SCR: Station Control Room
4. SCH: Signaling and Communication Hut

Relevant information on the actual natural disaster events affecting the THSR operation in 2021 is as follows:

Natural Disaster Events Affecting Operations

Event	2021	Response Methods
Heavy rainfall causes Miaoli landslide	August 7	The landslide detector of the DWS is activated and the system automatically sets the Temporary Speed Restriction (TSR) to 0 in the affected area. OCC authorizes maintenance personnel to enter the damaged area to conduct on-site surveys in accordance with standard operating procedures, adjust the operation mode according to the disaster situation in the affected area, and actively carry out emergency repair operations. After it is confirmed to be safe upon assessment, two-line and two-way operation can be fully resumed.
Earthquakes	April 25, September 13, October 24	After the main seismometer detects an earthquake warning, DWS automatically sets the TSR to 0 in the affected area, and the trains in the affected area automatically apply emergency brakes to stop. According to the standard operating procedures, after necessary inspections by OCC, the train will gradually increase its speed from a low speed to perform post-earthquake track inspections. After the train waving test and inspection are completed, normal operation will resume.

Countermeasures and Follow-up Treatment of THSRC for Miaoli Landslide Event in 2021

Cause of Event	On August 7, the outer circulation of Typhoon Lubi caused heavy rainfall for several days, causing the east slope of the high-speed rail mileage TK126+100 to collapse, and the falling soil and rock triggered the detector of the DWS.
Event Highlights	<ul style="list-style-type: none"> On the same day, a third-level emergency response center was opened in response to the landslide incident. Later, due to the difficulty in surveying as a result of the continuous sliding of soil and rock, it was adjusted to a second-level emergency response center. The on-site emergency repair work was completed from the afternoon to the evening, and the delay of the main line train was eliminated. Therefore, the setting of the emergency response center was also lifted on the same day. From August 8 to 19, the Miaoli-Taichung section trains running on the original single line (west line) were repaired and the two-line two-way operation was resumed the next day.
Impact of Event	<ul style="list-style-type: none"> As a result, operations between Miaoli Station and Taichung Station were suspended on August 7. From August 7 to 19, a total of 414 trains were affected, of which 384 trains were delayed for 5 minutes (inclusive) and less than 30 minutes, 15 trains were delayed for 30 minutes (inclusive) and less than 60 minutes, and 15 trains were delayed for more than 60 minutes.
Improvement Measures	<ul style="list-style-type: none"> Established the "Task force of HSR Slope Safety Assessment" to implement the first phase of the "HSR Slope Safety Assessment Plan," 35 slopes were audited and screened for priority inspection. The inspection has been completed in September 2021, and the inspection report was submitted to the competent authority in October, and the relevant improvement measures were completed in December. Implemented the second phase of the "HSR Slope Safety Assessment Plan," and commissioned external professional consultant technicians to conduct a comprehensive overall inspection of 389 slopes, and submitted a THSR slope safety assessment report. External professional consultant technicians submitted 35 priority slope inspection reports in January 2022, and completed the review in February. In 2022, 354 slope surveys and on-site inspections were carried out. The HSR slope safety assessment interim report has been submitted at the end of March 2022, and the final report is expected to be submitted at the end of June. It is expected that the installation of horizontal drains for the slope in THSR earthwork section will be carried out in 2022–2023 to reduce the accumulation of water on the slope and strengthen the stability of the slope. It is expected that the update and upgrade of the automatic slope monitoring system will be carried out in 2022–2023. Planning for TK126 slope permanent restoration related work (design, construction, geological survey and long-term groundwater diversion planning and design).



Slope failure stage and collapse range



THSRC maintenance personnel performed on-site emergency repair works

Human Factors - Man-made Disaster Prevention and Response Mechanism

As for man-made disasters, THSRC not only develops a “Material Man-Made Security Incident or Terrorist Attack Contingency Plan” to facilitate coordination with government agencies and to set up operational mechanisms, but also conducts safety inspections and strengthens drill plans according to different scenarios; when a man-made disaster actually occurs, different execution plans are drafted for the stages of crisis prevention, actual response, clean-up and recovery, etc. The relevant instructions are as follows:

- Crisis prevention stage: HSR police are engaged to assist in maintaining station order and safety of train services, and a security company is also contracted to maintain order at stations, right-of-way of equipment, and safety of train services. In addition, dedicated personnel are assigned to monitor the closed-circuit television cameras at various stations, important server rooms along the rail, or tunnel entrances. For detailed information on security management, please refer to the “Partner Relationship Management and Local Supply” chapter of this report.
- Actual response stage: In the case of man-made safety incidents, THSRC will immediately activate the crisis management and control mode. The key actions include rescue, evacuation guidance, isolation of the scene, access control, and notification of railway police.
- Clean-up and recovery stage: After the on-site investigation and evidence search are completed and approved by the judicial authority, the on-site clean-up and recovery operations will be carried out. In the early stage of resumption of operations, inspections and patrols will be enhanced, and the scale of the police on duty will be increased as support.

Equipment Abnormality—Abnormality Prevention and Response Mechanism

Regarding the handling of abnormal equipment, THSRC carries out the repair and maintenance of circuit boards/modules of all train cars of the train system, the repair and maintenance of the switch of the signal system and electronic equipment, and turnout equipment reliability improvement project through internal electronics maintenance center, while auditing and inspecting the maintenance records to strictly control the safety of the transportation equipment.

Disaster Prevention and Safety Training

In addition to planning overall preventive and contingency measures based on the three types of risk factors above, THSRC has set out a drill training plan every year to conduct regular and unscheduled drills for various hypothetical scenarios, so that employees at all levels will be familiar with the response procedures for various emergencies. We continuously refer to domestic and international experiences in various railway incidents and the “Taiwan High Speed Rail Overall Disaster Prevention and Response Plan” approved by the Central Disaster Prevention and Response Council, Executive Yuan, plan and launch various types of disaster prevention training and rescue drills with external supporting units to familiarize with the joint command response mechanism and improve on-site rescue and prevention capabilities. In 2021, THSRC completed a total of 87 disaster prevention and rescue drills (training) at various stations, depots, and routes.

Type of 2021 Safety Training

Internal Training for Site Commanders and Disaster Relief Engineers	A total of three site commanders and disaster relief engineers completed internal training. Due to the impact of the COVID-19, this training course was conducted online by video conferencing.
Disaster Prevention and Response Mechanisms Seminar	Various external supporting units along the HSR line (including the Toxic and Chemical Substances Bureau under the Environmental Protection Administration, firefighters, police, health units, environmental protection units, and Northern, Central and Southern medical response centers and professional technical teams) were invited to attend the seminar on THSR disaster prevention and response mechanisms. A total of 132 people participated in this seminar.
Disaster Prevention and Rescue Drills (Training)	A total of 87 disaster prevention and rescue drills (training) were completed at various stations, depots and routes. The detailed training records are shown in the table below.

2021 Disaster Prevention and Rescue Drills (Training) Record

Drills (Training) Location	Station	Route	Building	Unscheduled Test	Others	Total
Frequency	67	6	5	6	3	87

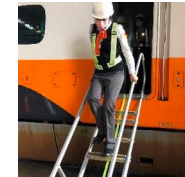
1. Considering the frequent earthquakes in Taiwan, the Company plans to conduct an earthquake disaster drill in the main line area every year to strengthen the ability of colleagues to respond to and deal with earthquake disasters. In 2021, the “Passenger Evacuation in an Earthquake Incident” was held. During the preparations for this drill, the COVID-19 has heated up. In order to take into account the pandemic prevention and the schedule of the drill, each unit overcomes the space limitation and conducts the table drill by video conferencing. In collaboration and cooperation with external supporting units within the jurisdiction and related internal units of the Company, the drills prevent the continuous expansion of the disaster (A total of 46 people participated in the drill).
2. The “Train on Fire Response Evacuation Drill” was conducted to simulate the fire accident in a running train that needed to enter the station and stop for evacuation. After the incident, the station and Operational Control Center (OCC) sent notices and conducted emergency response, evacuated passengers while mobilizing maintenance personnel to conduct disaster investigation and emergency repair operations (A total of 49 people participated in the drill).
3. The “Technical Training for Emergency Skill” was conducted at Yanchao Main Workshop through a skills competition. The operation and maintenance units selected important response technical projects in three categories for this competition activity: emergency repair operations, passenger evacuation safety operations, and firefighting and flood control response operations. They took this opportunity to observe each other, so that each unit could continue to improve their skills and the overall skill level. A total of about 240 colleagues and third-party manufacturers from various units of the Company attended the drill and training.



Rail Emergency Fishtail Sheet Installation Competition



Emergency replacement of air conditioning system failure was carried out in groups of two



The train crew completed the stability test after the train escape ladder was erected



Colleagues from the Track & Power Department replaced the trolley arm of the overhead catenary system

In response to possible major disasters, as well as in order to implement consolation and immediate medical care for injured passengers and their families, THSRC has established the “Care and Consolation Team” in all three regions, namely North, Central, and South Taiwan to provide relevant support and company, including care and consolation telephone lines, family contact, medical assistance, legal consultation, and funeral and other consultation on various needs. This team also regularly participates in THSR’s annual disaster prevention drills (training) to review and optimize its mobilization effectiveness through actual drills.

Safety-first 24/7 Monitoring

The command of the overall operation system of THSRC is controlled by Operational Control Center (OCC) at the Taoyuan Operation Management Center (OMC) Building, including route control, signaling and safety interlock, power control, communication, data transmission or monitoring alarms equipment. Through 24/7 real-time monitoring, THSRC keeps abreast of the status of the operation and night maintenance along the entire HSR line while maintaining close contact with the station control centers, depot control centers, and external emergency supporting units to ensure transportation safety.



THSR Operation Control Center

Smooth Travel in Adherence to Commitment

Traffic Dispersion and Transfer Services

Traffic Dispersion Measures

THSRC adopts rigorous internal procedures to draw up dispersion plans and submit them to the Ministry of Transportation and Communications (MOTC) for review before execution. At present, THSRC provides 34 trainsets in total for operational services. Train schedules are planned in line with travel needs at different time periods so as to maximize the ridership of the train to meet the travel needs.

Traffic Dispersion Scheduling Measures

Period of Occurrence		Traffic Dispersion Scheduling Measures
Weekdays	(Mondays to Thursdays)	Temporarily increase the number of trains according to the number of passengers on the current day.
Peak Weekend Periods	(Fridays to Sundays)	Move part of the maintenance operations to weekdays to increase the number of usable trains during holidays, and temporarily increase the number of trains on the current day according to the number of passengers on the current day during the peak weekend period.
During Long Holidays	(e.g., Lunar New Year, Tomb-Sweeping Day, etc.)	Control maintenance operations and provide maximum ridership to meet transportation demand, and temporarily increase the number of trains according to passenger demand on the current day during the traffic dispersion period for long holidays, in order to disperse large numbers of passengers.

In 2021, due to the impact of COVID-19 on THSRC's operation, an "adjusted short-term train schedule" has been implemented since late May, with 556 trains per week to maintain basic travel needs. Since late August, in response to the easing of the pandemic and the recovery in the travel demand, we have continued to increase the train frequency, and have fully resumed travel services of 1,016 trains per week from November 8 to meet the demand for transportation capacity.

Transfer Services

THSRC offers transfer or shuttle services in collaboration with various modes of public transportation at various operating locations, including shuttle bus, Taiwan Railways Administration (TRA), Mass Rapid Transit (MRT), public bus/express bus, taxis, parking lots, car rental, as well as pick-up and drop-off services for the physically challenged passengers. Moreover, THSRC has prepared transfer maps and established a transfer information system for passengers to consult, while providing transfer information at each HSR station on its corporate website [and](#) THSRC APP.

Sustainability Commitment

Transportation Inclusion

In order to provide a friendly and inclusive accessible ride environment for all passengers, while actively responding to the UN sustainable development goals of "building affordable, safe, eco-friendly, resilient, and sustainable transportation," THSRC has set up reminder signs at multiple places at the stations to guide the elderly, wheelchair-bound, physically challenged passengers, and those with large luggage or strollers so as to develop a friendly environment while a beautiful ride experience for every passenger is created through sound and complete station/train services and facility planning. Relevant services and facilities are as follows:

Stations

- Completed the addition of elevators at Banqiao Station and Taoyuan Station, the addition of rain shields in the temporary parking and loading area at Chiayi Station, the improvement of broadcasting in the lobby on the first floor of Miaoli Station, and the improvement of the information display system at the ticket window of the station in 2021 to provide a passenger-friendly environment.
- Set up accessible ticket counters/ticket gates/toilets and elevators, and other service facilities, and call bells in the accessible restroom for assistance to passengers at any time.
- Specially prepared guidance services to assist elderly passengers traveling alone, wheelchair-bound passengers, or physically challenged passengers in entering and exiting the station. A total of 58,501 passengers received the guidance services in 2021.

Trains

- Car 7 is designed as an accessible car, and four seats are reserved for physically challenged passengers' companions to take care of the physically challenged passengers. The car seats and accessible restroom are equipped with call bells. The physically challenged passengers can use it to call the train crew for assistance when necessary, and there are also charging sockets for electric wheelchair charging.
- There is a secure and private breastfeeding room at the entrance of car 5 of the THSR train. The train crew will also introduce the breastfeeding room equipment as per the passengers' needs to provide a warm and safe travel environment for mother and baby passengers.
- Large luggage storage areas are added in cars 3, 5, 9, and 11 for storage of luggage as well as folding wheelchairs, mobility aids, and strollers.
- There is a "seat map information system" at the train master compartment with a built-in reminder function for boarding guidance, reminding passengers with disabilities of the boarding section and the passenger assistance items (such as borrowing a wheelchair at the station). The prompt sound and reminder screen in the system will be turned on before passengers get on/off the train, so that the train crew can provide more complete and considerate services quickly and accurately.



Set up elevator signs for the elderly, wheelchair-bound, physically challenged passengers, and those with large luggage or strollers



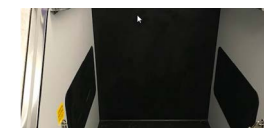
There are four accessible seats in car 7



There is a breastfeeding room in car 5 for female passengers who need to pump breast milk and breastfeed

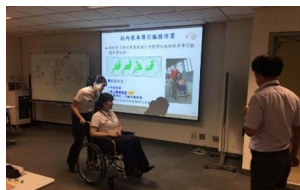


Add a rain shield from Exit 3 of Chiayi Station to the temporary parking area of Baotie 5th Road



Add large luggage storage areas in cars 3, 5, 9, and 11

Internally, THSRC also arranges train guidance service courses for newcomers of train station staff and train crew members to learn guidance operations for wheelchair-bound and visually impaired passengers. In addition to arranging external lecturers to explain service skills, practical experience training will also be arranged for colleagues to enable them to better understand the practical operation precautions and meet the needs of passengers.



In-station ride guidance training

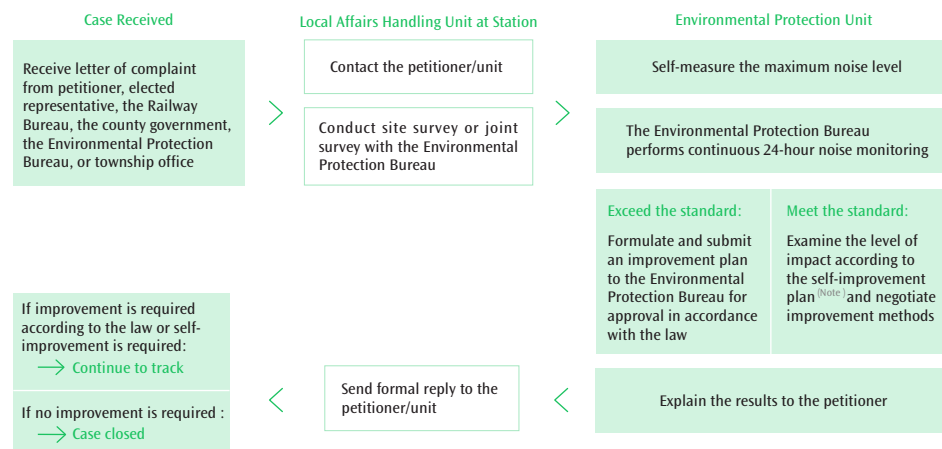


Train guidance training

Neighboring Care

We continue to implement environmental monitoring and environmental protection works through environmental management systems, so that our environmental protection projects comply with the relevant laws and regulations. With regard to the current environmental and noise problems under THSR bridges, which are most frequently reflected by residents along the HSR line, THSRC periodically organizes environments and waterway facilities under these bridges and implements improvement measures such as installing soundproof doors and windows at homes or building soundproof walls to reduce the impact of noise. Meanwhile, we have formulated the "High Speed Rail Noise Improvement Plan" and the "Noise & Vibration Petition Treatment for HSR During Operation," and established the "High Speed Rail Noise Case Handling Process" to have the most complete noise handling and prevention procedures. Sales executives at each station also participate in activities from time to time and communicate with local opinion leaders and residents with the aim of achieving a win-win situation through communication. In 2021, we handled 18 cases of THSR noise problems reported by residents along the HSR line. There was only one case in the "Dayuan District, Taoyuan City" section since the average maximum volume of the THSR trains did not meet the "Land Transportation System Noise Control Standards." According to the "Noise Control Act," the noise improvement plan was submitted for review on February 14, 2022, and the Environmental Protection Administration issued a letter on May 16 to agree to take it for future reference. Please refer to the table below for the relevant handling conditions.

THSRC Noise Petition Handling Process



Note: The level of impact is determined in accordance with the technical specifications for environmental impact assessment set by the Environmental Protection Agency (EPA).

Number of Noise Petitions and Related Handling Statuses in the Three Most Recent Years (2019~2021)

Year	2019	2020	2021	Total
Number of Items	26	18	18	62
Need to be Improved	0	0	1	1
Remarks	—	—	<p>The case that needs to be improved in 2021 was the noise improvement case of Section 2, Dacheng Road, Dayuan District, Taoyuan City. In this case, residents complained about the noise from high speed rail, so the Department of Environmental Protection, Taoyuan conducted 24-hour high speed rail traffic noise monitoring. The results showed that the average maximum volume of the high speed rail in this section was 83.3 dB(A), which exceeded the requirements of the "Land Transportation System Noise Control Standards," and it was required to formulate a noise improvement plan within 180 days upon receipt of the notification from the competent authority. THSRC's project team has properly handled the issue and submitted the noise improvement plan for review on February 14, 2022, and the Environmental Protection Administration issued a letter on May 16 to agree to take it for future reference.</p>	



Technology

Innovative Technology

Technology

Innovative Technology

Subchapter Title	Material Topics	Management Purpose	Management Method	Assessment Mechanism	Management Performance in 2021
Sincere Services and Intelligent Transportation	Technological innovation	<ul style="list-style-type: none"> Continue to apply new technologies in order to improve the convenience of ticketing services, the smoothness of ticket purchase channels, and the efficiency of train operations, while using digital innovation to meet customers' needs for ticket purchases on mobile devices and strengthening communication immediacy. Strengthen the service delicacy and accuracy of "Artificial Intelligence Customer Service," and continue to improve service quality and efficiency. 	<ul style="list-style-type: none"> Review the policies and market development of information and communication technology and payment tools regularly, and formulate technology introduction strategies in line with government policy indicators and industry development status. Continuously collect opinions through customer satisfaction feedback, improve the content of the "Artificial Intelligence Customer Service" service knowledge base, and strengthen the efficiency of customer service operations to improve customer experience and the quality of "Artificial Intelligence Customer Service" responses. 	<ul style="list-style-type: none"> Establish the "Origination Process of Business Process Computerization Regulation" and "Acquisition of IT System and System Development Regulation" to ensure that collaborative operations among all units can smoothly promote innovative services. Check the response accuracy and coverage rate of the "Artificial Intelligence Customer Service" throughout the year, and analyze the usage and response rate to continuously optimize the "Artificial Intelligence Customer Service" system. 	<ul style="list-style-type: none"> As of the end of December 2021, the cumulative number of downloads of the THSRC T-EX mobile ticketing APP had exceeded 11.43 million. As of the end of December 2021, the average service accuracy of "Artificial Intelligence Customer Service" was 93%.
Convenience, Attentiveness, and Maintaining Relationships	Privacy and information security management	<ul style="list-style-type: none"> Provide passengers with safe, convenient, and reliable information services, including the collection, processing, or use of passengers' personal information, in order to ensure internal and external stakeholders' trust in THSRC's information environment. 	<ul style="list-style-type: none"> Continue to supervise colleagues and vendors to implement information security protection work through the verification of ISO 27001 Information Security Management System and the promotion of "Information Security Policy." The head of each office and department establishes an information security committee, which holds an information security management review meeting every six months to supervise the development direction and implementation results of information security, so that the information security management system will continue to operate steadily. Develop a procedure for "The Plan Of Security Measures For The Personal Information File," and hold meetings regularly for overall examination to ensure that personal information is fully protected. 	<ul style="list-style-type: none"> Perform audit by a third party once a year to maintain the effectiveness of the ISO 27001 information security management system. Perform the internal information security audit twice a year to review the implementation of information security of the user units and management units. Perform audit of the relevant units involved in personal information security management operations as per the "Management System Internal Audit Regulation" so as to keep abreast of the status of each unit's implementation of security maintenance measures related to personal information protection. Hold Information security and personal information awareness education and training regularly every year. 	<ul style="list-style-type: none"> Introduced a real-time membership checking mechanism into the various ticketing systems, and TGo reached 1.71 million registered members by the end of 2021. Performed the third-party information security audit in October 2021; conducted the internal audit of information security in April and September 2021, respectively. Conducted a total of 3 hours of information security education and training every year. Strengthened the awareness of information security and personal information protection of employees through education and training. In 2021, 100% of the employees completed the education and training.
	Customer relationship and quality management	<ul style="list-style-type: none"> Adopt diverse channels to actively respond to customer opinions and maintain high-quality service standards to ensure that the product content, services, and safety performance meet passengers' needs to respond to the diversity and variability of the transportation market. 	<ul style="list-style-type: none"> Establish "Feedback Collection Channels and Customer Service Operations System" and "Current Customer Complaint Resolution Mechanism" to keep abreast of and respond to customers' needs accurately. Maintain the safety and quality of travel and transportation through external quality inspection and internal pattern identification. Strengthen the service quality of attendants, optimize facilities and services of stations and trains, and sell wider variety of products. 	<ul style="list-style-type: none"> Analyze customer opinions received from the Company's website e-mail, "Artificial Intelligence Customer Service," and customer service centers to collect passenger feedback and continue to optimize services. Add a tracking mechanism to the Customer Response Handling System (CRH) to remind the responsible units to report on the progress of improvement, and implement the improvement to ensure service quality. Manage the execution progress of each marketing project through regular meetings and closing reports, and track the achievement of targets. 	<ul style="list-style-type: none"> Taking into account that the objectivity and reference of the results of the passenger satisfaction survey were affected by the Coronavirus disease 2019 (hereinafter referred to as COVID-19), the survey was temporarily suspended in 2021. Taking into account the survey results in 2020 and the content of customer feedback received on weekdays, response improvement measures were taken.

Sincere Services and Intelligent Transportation

In order to provide customers with a highly satisfying ride experience, THSRC continues to apply the latest technology to create the “THSRC ITS Smart Railway Services System,” and strengthen operational efficiency and service quality through Smart Ticketing System, Smart Passenger Service, Integrated i-Traveling Information, Smart Train Operation and Smart Safety & Emergency Management plans. Please refer to the table below for specific actions and measures.

Smart Ticketing System

- Complete the software optimization of the ticket window equipment in the stations and the upgrade of the network equipment
- Establish a new-generation ticketing service system
- Promote the T Express Booking Chatbot project to enhance user experience
- Add the function of purchasing Senior/Disabled tickets in the ticket vending machines
- Plan the periodic/multi-ride ticket renewal service on the mobile phone

Smart Passenger Service

- Launch “Artificial Intelligence Customer Service” to provide passengers with answers to frequently asked questions and personalized inquiry services 24/7
- Launch the “TGo 365” Point Redemption Platform Redemption Service to provide daily-life point usage services in addition to the redemption of passenger points for tickets
- Establish a ticket counter information display system to improve passenger services

Integrated i-Traveling Information

- The T Holiday provides diverse travel information and exclusive member discounts through the TGo points as members can redeem their points for travel expenses
- Launch the online redemption for overseas travel passes and seat selection functions for tourists from overseas

Smart Train Operation

- Adopt the “Train Operation Management Information System (TOMIS)” to consolidate train number, running position, train schedule, and other travel information to assist train crew members with proper transportation management
- Introduce graphical data and cross-query functions into various systems to strengthen the efficiency of train operation management
- The “Intelligent Train Crew Duty Report System (IDRS)” is launched to provide crew members with online maintenance and duty roster query to improve the efficiency of transportation management
- The “OCC Mimic Panel Display Intelligence Integrated System” is planned to analyze the real-time turnout position mapping with timetable route setting, so as to strengthen the safety and efficiency of train operation management

Smart Safety & Emergency Management

- Manage THSRC's historical operational data digitally, build an operating activity safety incident system, and provide relevant statistical data for decision-making and reference
- Continue to develop a localization earthquake early warning system, review and improve the earthquake inspection operations in the past, provide suggestions for the best response decisions, and reduce the risk of earthquake disasters
- Plan to integrate the Company's existing response information systems for the Emergency Operations Center (EOC) and on-site units for response reference to improve response efficiency

Passenger Services

Strengthening Customer Relationships with Optimized Experience

THSRC launched the individual membership mechanism “TGo membership program” in October 2017, enabling customers to purchase tickets as THSRC members and accumulate points through consumption to redeem THSR tickets or enjoy discounts. In order to continue to deepen customer loyalty and adhesiveness, THSRC established “TGo 365” Point Redemption Platform in July 2020 with more than 60 external chain enterprises and stores in HSR stations by 2021, as well as launched a total of more than 418 products, so that members can redeem their points for products as they want. With the effect of alliances across different industries, this program enhances business opportunities for relevant businesses while jointly deepening the value of THSRC TGo membership. As of the end of 2021, the cumulative number of TGo members reached more than 1.71 million, and more than 386,000 products were redeemed, with a total of more than 826,000 products redeemed cumulatively.



Promotional Visual for the TGo Membership Program

THSRC not only continues to optimize the membership mechanism, but also improve the convenience of ticketing services through multiple ticket window equipment, and leverages the TGo Member ID real-time verification, which has been launched successively since 2020, to improve the correctness of members' ticket purchases in various seat reservation systems - including ticket window equipment, ticket vending machines, websites, convenience stores, smart phones, and other channels. In order to maintain the fairness of digital ticket purchase transactions, THSRC has introduced mechanisms to prevent bots from snatching huge numbers of tickets, and take appropriate blocking measures against specific sources for abnormal situations. In the near future, THSRC will regularly optimize and set up relevant blocking mechanisms through system monitoring.

Innovative, Digital, and Real-time Communication

THSRC is committed to developing a multi-faceted information platform for timely update of public information related to transportation and display of promotional videos, and allowing passengers to have real-time access to information related to train schedule. In order to interact with customers in real time and obtain feedback and suggestions instantly, THSRC provides the latest product and service information through our Facebook fan page. In 2021, THSRC's Facebook fan page garnered 422,000 fans cumulatively, and posts on THSRC's Facebook fan page reached 2.965 million throughout the year, with 597,000 interactions on these posts.

THSRC is also constantly pursuing more intelligent travel services. We have launched a personalized mobile ticketing service “T-EX App,” and the “Taiwan High Speed Rail App” that emphasizes multi-functional travel services. “Taiwan High Speed Rail App” aims to facilitate real-time communication with consumers, and provide customers with more comprehensive digital services for membership information, itinerary arrangements and instant discounts. According to the statistics, as of 2021, the cumulative number of downloads of the “T-EX App” exceeded 11.43 million, of which mobile payment accounted for 40% ; the number of downloads of the “Taiwan High Speed Rail App” exceeded 1.2 million, with the registered TGo members taking up more than 80% .



Taiwan High
Speed Rail App



T-EX App

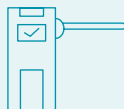
THSRC Multiple Ticketing Channels



HSR Stations

Ticket window equipment Ticket vending machine

Optimization of ticket vending machine: Add the function of purchasing Senior/Disabled tickets, including the reminder of the expiry date of self-service ticket collection and the scanning of TGo member account.



Gate (Mobile Payment)

EasyCard Co-branded Credit Card iPass Co-branded Credit Card

- Using EasyCard Co-branded Credit Card/iPass Co-branded Credit Card to purchase tickets for non-reserved seats enables passengers to board THSR trains without having to top-up and purchase tickets in advance. As of December 2021, nearly 720,000 passengers purchased electronic tickets for non-reserved seats using co-branded cards. (During the period from May 15 to November 7, due to the impact of the COVID-19, only reserved seat tickets were available, and the purchase service for electronic tickets for non-reserved seats using co-branded cards was suspended).



Convenience Store

Convenience Store Ticketing Service (7-Eleven, Family Mart, Hi-life, and OK Mart)

- The new functions of Senior/Disabled tickets and quick scan of barcodes for input of ID/Account numbers for TGo members were activated in January 2021.
- Provide passengers with convenient ticket purchase/collection services 24 hours a day, all year round, at over 12,000 convenience stores (7-Eleven, Family Mart, Hi-Life, and OK Mart) nationwide. A total of 4.45 million THSR tickets were sold at convenience stores as of December 2021.



Smart phone

Electronic ticket system via smart phones (T Express Mobile APP)

- The new revision of the T-EX App was completed in February 2021, providing a more friendly, intuitive mobile ticketing service in line with the accessibility features of VoiceOver on iOS phones and TalkBack on Android phones for visually impaired people.
- The electronic checkout barcode service at OK Mart was added in May 2021. At present, T-EX convenience store electronic payment slips can be used in the four major convenience stores for checkout and ticket collection.
- In July 2021, the notice of non-adjacent seats was added, and the mobile tickets of travel coupon products (including hotel coupons, airline coupons and THSR TourPlus Package) were available for download.
- In September 2021, the T-EX mobile ticket distribution function was optimized, and the functions of "arrival reminder" and "Validity period notification for Senior/Disabled passengers" were added.
- As of December 2021, 17.18 million of tickets were paid via the T-EX App, and more than 13.77 million mobile phone tickets were issued, making it the most commonly used ticketing channel for people to purchase THSR tickets for reserved seats.



Website

Online reservation system



Telephone

Voice reservation system

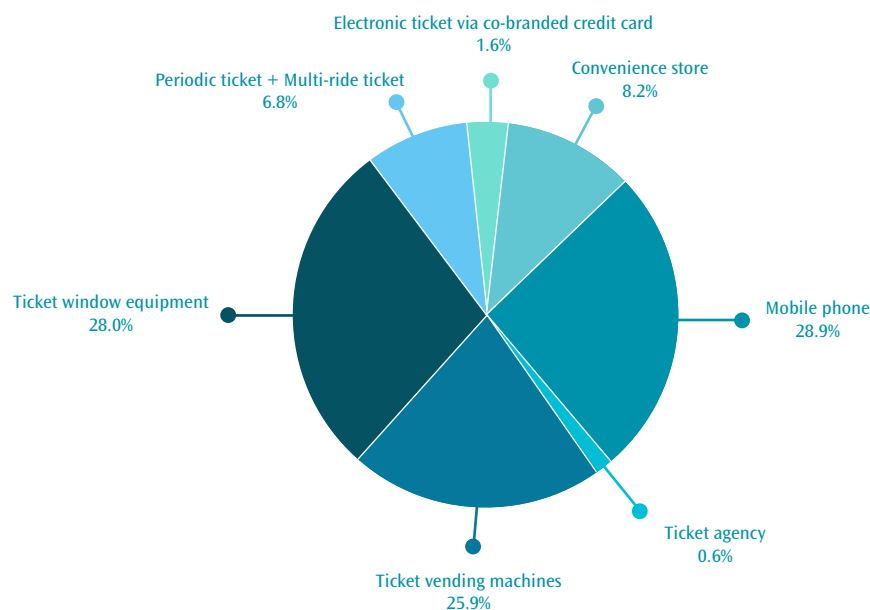


Others

Customer service center Reservation for group tickets (including ticket counters at HSR stations, fax, and online booking) Travel agent ticketing management system THSR Joint Ticket Booking System(Airline/Hotel/OTA)

- Launched in 2021, "THSR TourPlus Package" is rolled out along with our selected online travel agencies such as Klook, KKday and EZTravel, offering a special add-ons ticket discount which associates with designated itineraries.

Overview on the Use of Ticketing Channels in 2021



Smooth 4G Communications Along the Entire HSR Line

THSRC provides high-quality Wi-Fi services. In 2018, we completed the establishment of 408 sets of network equipment for 34 trains in its entire fleet, effectively improving the quality of mobile communication for passengers. We also set up 236 Wi-Fi wireless network hotspots in the public areas of 12 stations along the HSR line, providing convenient Wi-Fi network services for passengers at the station, and achieving THSRC's ideal of "high speed travel with uninterrupted on-board connection." As the number of users continues to increase, we will continue to improve the quality of network services and equipment so as to provide a friendlier and more convenient network experience.

Convenience, Attentiveness, and Maintaining Relationships

Safety and Quality Services

THSRC regularly reviews the effectiveness of quality management through a rigorous quality management system, various quantitative quality performance indicators, and quality improvement proposals, and promotes quality policies from top to bottom, so that the spirit of quality becomes the belief of colleagues in their daily work, so as to protect each passenger who trusts THSRC.

Quality Management System (QMS)

THSRC has introduced the ISO 9001 quality management system since 2005 and has held a quality management review meeting every year since 2007, which is hosted by the President. With the heads of various offices and departments participating in the meeting, it aims to review the continued applicability of the Company's quality management system and quality policy. Since 2010, THSRC has commissioned an external third party certification company to conduct certification of the quality management system as per the ISO 9001 international standard every year. The scope of certification covers the overall core business of "HSR operation, maintenance, and passenger service." As of 2021, it had successfully passed the certification.

External Quality Inspection Items

Quality Audit and Supervision Unit	Items	2019	2020	2021
Third-party Certification Company	Certification of ISO 9001	Renewal of ISO 9001 certification	Regular audit and verification of ISO 9001	Regular audit and verification of ISO 9001
Railway Bureau, MOTC	Annual regular operational inspection and temporary inspection	Once	Once	1 regular inspection 1 temporary inspection

In order to thoroughly implement quality management, THSRC also regularly examines the configuration of the facilities related to internal operations, equipment, and relevant system software and hardware components while strictly controlling and inspecting the quality of internal operations to ensure that THSRC's quality management system keeps pace with the times, and continue to enhance the quality of operations and maintenance.

Examination of Internal Configuration

Items	Description
Main Categories	Core, trackside equipment, track, closed-circuit television, facility, station, maintenance depot, and depot equipment
Total Monitored Items	34,919
Percentage of Configuration Monitored Items	80.70%
Verification Method/Frequency	Internal verification by the Quality Assurance Office/once every quarter

Quality Management Performance Review

THSRC has established various internal key performance indicators for quantification of quality, and reviewed and improved those tasks that have not reached the target by following up on the results quarterly, so as to provide customers with high-quality travel services in line with four major aspects of "safety," "reliability," "efficiency," and "customer satisfaction." In 2021, the number of passengers who were severely injured and died as a result of THSRC's traffic accidents was 0. The number of passengers with minor injuries totaled 6, an increase of 3 people compared to 2020. As for the performance indicator - "safety," the achieved value of the passenger injury rate (minor injury) was 0.14 per million trips, which was higher than the target/estimated value. After investigation, passengers were accidentally scratched or smashed by falling objects while using the facilities at the station. In response to this situation, THSRC has comprehensively inspected the status of the relevant equipment and made replacements, and strengthened the inspection to ensure the safety of the equipment.

Quality Performance Indicators

Target	Items	Formula	2019		2020		2021	
			Target/ Estimated Value	Achieved Value	Target/ Estimated Value	Achieved Value	Target/ Estimated Value	Achieved Value
Safety	Passenger injury rate (severe injury and death)	Passenger injury (severe injury and death) per million trips	0	0	0	0	0	0
	Passenger injury rate (minor injury)	Passenger injury (minor injury) per million trips	≦ 0.08	0.06	≦ 0.07	0.05	≦ 0.06	0.14
Reliability	Five-minute punctuality rate (Excluding Delays Due to Force Majeure)	Number of train runs with delays within five minutes of scheduled time/ Total number of train services	> 99.5%	99.9%	> 99.5%	99.8%	> 99.6%	99.9%
Efficiency	Customer comments & suggestions achievement rate	Number of cases replied within 7 working days/Total number of cases	≧ 99.5%	100%	≧ 99%	100%	≧ 99%	100%
Customer Satisfaction	Overall service satisfaction	Number of respondents giving 5 points and 4 points in the customer satisfaction/ Total number of respondents	≧ 95%	96%	≧ 95%	97%	≧ 99%	Due to the impact of the COVID-19, the survey was temporarily suspended once

THSRC not only regularly reviews and tracks various quality performance indicators, but has also launched an employee proposal improvement system and introduced quality control circle activities every year since 2011, encouraging colleagues to develop practical ideas for optimizing quality control and operational performance by leveraging their innovative thinking and the technology, so as to continuously improve THSRC's travel services. Internally, we drive the entire company to invest together to improve the quality, safety, and efficiency of travel. Externally, we show the positive image that THSRC attaches great importance to safety and quality. The best performance improvement examples in 2021 are as follows:



The Best Quantifiable Example of Performance Improvement in 2021 - "Improve the reliability of the air-conditioning equipment in the core server room and reduce maintenance costs"

Foreign equipment is originally used in the core equipment room at the station. Once failure, the maintenance cost is high and the maintenance materials are not readily available. The new localized equipment is installed to improve energy efficiency, effectively reduce maintenance costs, and improve our independent maintenance capabilities. The replacement at each depot and station is carried out at the same time to effectively save a total of more than 2.7 million of component costs.



The Best Unquantifiable Example of Performance Improvement in 2021 - "Chemicals Management System (CMS)"

Manual transcription is originally used in chemicals management practice. After the establishment of the CMS, about 2,872 hours of man-hours/year are saved. We regularly optimize the system through testing and education and training to strengthen the safety goal of occupational health and safety.



Opening Ceremony of Quality Month Chairman Chiang, Yao-Chung personally presented the flag to the members of the "Bogie Circle" team



THSRC won the second place in the Taiwan Continuous Improvement Award (Silver Tower Award)

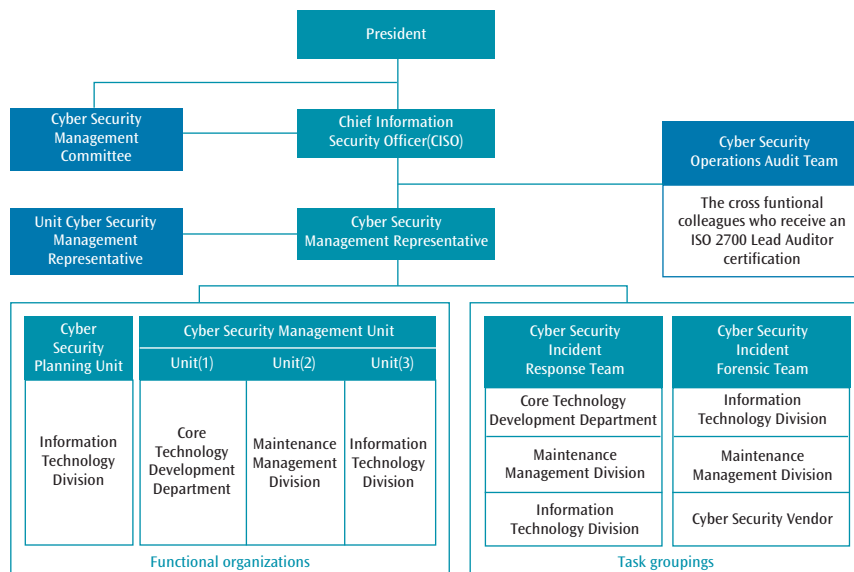


Opening Ceremony of Quality Month Chairman Chiang, Yao-Chung personally presented the flag to the members of the "ChaCha Circle" team

Privacy and Information Security Management

In order to implement information security, THSRC established the “Information Security Management Committee” in 2017 and assigned information security representatives from different offices and departments of the Company to hold an information security management review meeting every six months and an information security representative meeting every quarter to review the development direction, strategies, and relevant implementation results of information security, so that the information security management system will continue to operate steadily. A total of two information security management review meetings and four information security representative meetings were held in 2021. The information security governance report and results have been recorded in the report of the 15th Board of Directors of the ninth session in 2021. For more information about the policies and management plans related to information security, please refer to THSRC Corporate Website. [↗](#)

THSRC Information Security Management Framework



The prevalence of smart services has fostered the importance of privacy and information security issues. In order to implement the maintenance of personal privacy and information security, THSRC not only collects, process, or utilize personal information in compliance with laws and regulations, but has also formulated “Personal Information Protection Policy” and “Rights and Interests Regarding Customer Information Protection,” and reviews the personal information protection mechanism through regular meetings. Every year, we also regularly organize information security and personal information awareness education and training for all employees for a total of 3 hours to strengthen the awareness of information security of each colleague. In 2021, 100% of all employees completed the education and training (base year is calculated as of the fourth quarter of 2021, excluding new employees and those on long-term injury and sick leave).

In 2021, THSRC received no customer complaints regarding infringement of customer privacy or loss of customer information. In the future, we will continue to supervise employees and service providers to implement information security protection through external audit and internal control mechanisms. In 2020, THSRC passed the renewal of ISO 27001 certificate, and passed the re-inspection audit in October 2021. We continue to maintain the validity of the certificate and continue to make improvements in the field of information security. We plan to complete the introduction and certification of the expanded scope in 2022. The details of the implementation of personal information security maintenance measures for THSRC are as follows:

Implementation of Personal Information Security Maintenance Measures

Safety Maintenance Measures for Personal Information Protection Management	Personal Information Management Measures and Implementation Results in 2021
Establish a management organization and allocate considerable resources	Department representatives formed the “Personal Information Protection Implementation Group.” As of September 2021, there were 20 personal information representatives, and a personal information representative meeting is held every quarter, and a total of 4 such meetings were held in 2021.
Risk assessment and management mechanism for personal information	A three-level management model is adopted as per the security level of personal information files, and risk identification and assessment of personal information files were conducted every year, and personal information files inventory audits were performed twice every year, to maintain the correctness of the “Personal Information File Inventory.”
Information security management and accident prevention, notification, and response mechanisms	Information is divided into three types: written forms, electronic files, and system files, and relevant regulations on personal information security incident response, a complete notification mechanism, and a review and improvement policy have been formulated. As of 2021, no personal information security incident occurred.
Awareness promotion, education and training	One hour of education and training for new employees and one hour of annual training for all employees.
Equipment safety management	Terminal equipment (including personal computers, notebook computers, and mobile devices) and various types of servers are all handled in accordance with THSRC’s relevant information security management regulations.
Overall continuous improvement of personal information security maintenance	The annual audit results are regularly reviewed at the personal information representative meeting and reported to the review meeting of the Information Security Management Committee.

In response to the COVID-19, THSRC’s employees worked in groups during the COVID-19 in 2021. The response measures and information security protection for the use of Virtual Private Networks (VPN) and employees’ remote work are listed below, so as to improve colleagues’ home office information security:

Improve employee portal availability:

Increase equipment capacity to ensure sufficient employee connections, and adjust the system to a High Availability architecture.

Strengthen the security authentication of the portal website system:

Two-factor authentication is adopted for employees who log in to the Company’s intranet from the external network. The employee account number, password, and One Time Password (OTP) are required for authentication, and the time limit of OTP is shortened and the length of OTP is increased.

Increase network bandwidth:

Increase network bandwidth and circuit redundancy, increase the number of employee connections, and improve network connection stability.

Improve VPN to high-availability architecture:

In case of any abnormality, the VPN device will complete the switch within 1 second. After the switch is completed, the password and OTP need to be re-authenticated.

Strengthen VPN connection monitoring:

VPN uses two-factor authentication to monitor the connection source IP. In case of any abnormality such as the connection source IP is detected to come from a place outside Taiwan which intensively requests for login in a short period of time, the firewall will control and block the connection IP.

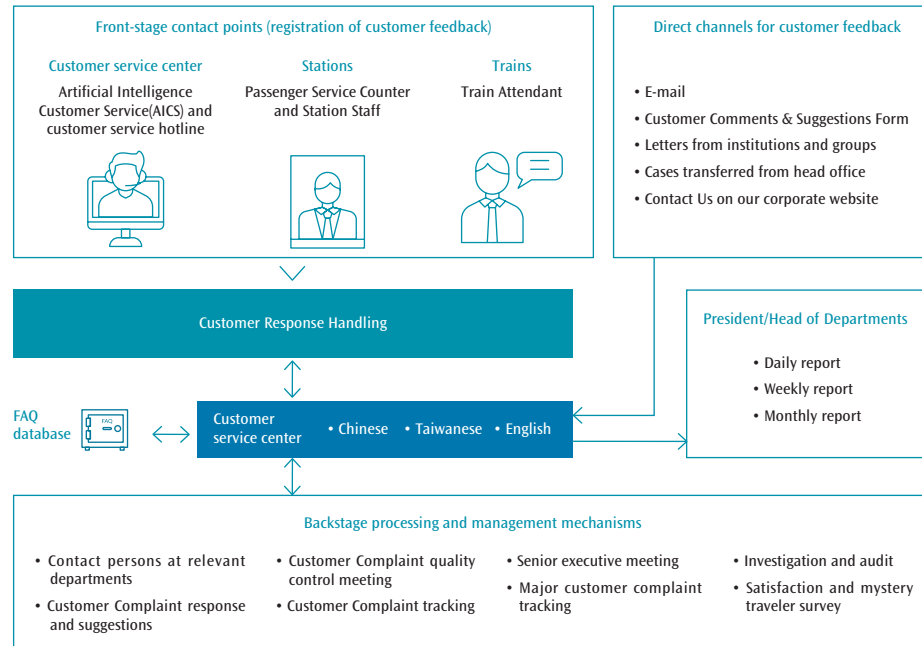
Increase the frequency of network usage checks:

Increase the frequency of inspections, collect log traces every day, and perform 24 hour monitoring.

Customer Relationship Maintenance

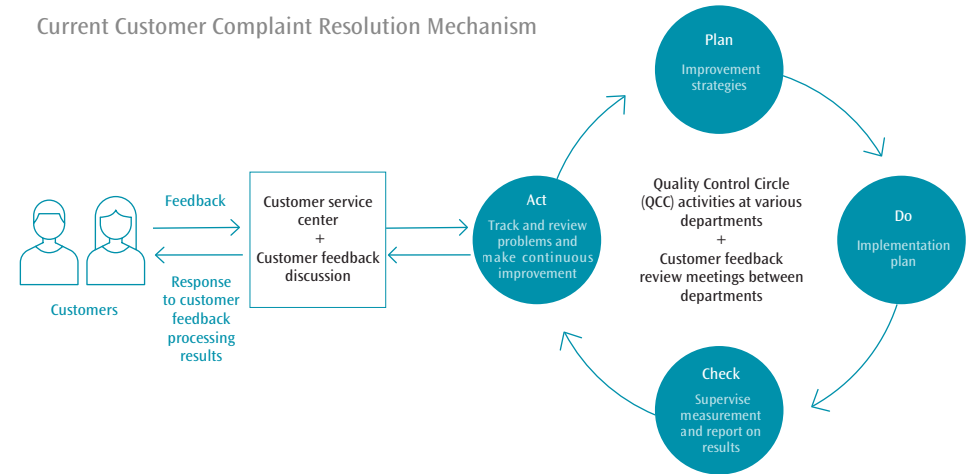
Continuously innovating service content and types to create thoughtful services that exceed customer expectations is the driving force for THSRC's continuous improvement. The Company has set up a dedicated management department and opened up diverse communication channels to respond to all passengers' needs in real time, so as to deepen customer relationships, such as provision of services in the Chinese/Taiwanese/English languages at the customer service center, "Artificial Intelligence Customer Service," and e-mail message sending function at the corporate website, etc. Current feedback collection channels and customer service operations system is shown in the figure below.

Current Feedback Collection Channels and Customer Service Operations System



THSRC has set up a complaint resolution mechanism to not only provide immediate consolation and attention but also submit customer feedback to the quality management process at each department and customer feedback review meetings among departments, so as to truly incorporate customer feedback into management and implement improvements. In 2021, about 730,000 cases were reported to the customer service center from passengers giving feedback and suggestions and making inquiries about the use of "Artificial Intelligence Customer Service." The inquiries mainly covered ticketing, lost and found, and THSR discounts; among them, about 170,000 cases were related to self-service inquiry and application services using "Artificial Intelligence Customer Service" (accounting for 23%), which mainly covered schedule, ticketing, travel guide and other inquiries, as well as online self-service application for lost and found reporting.

Current Customer Complaint Resolution Mechanism



Highlight story: THSRC's "Artificial Intelligence Customer Service"

THSRC's "Artificial Intelligence Customer Service" system was conceived in 2019, and a professional team was established for implementation, striving to improve service efficiency and quality, and provide passengers with innovative technological service experience. The "Artificial Intelligence Customer Service" system was officially launched at the end of 2020, and technologies such as data analysis and sorting, natural language and word processing, and machine learning were introduced to provide passengers with answers to frequently asked questions and personalized service application and inquiry services 24/7.

The "Artificial Intelligence Customer Service" system opens up the opportunity for customers to experience the technological services in their daily life, including online interactive consultation with digital robots at all times, or services such as online lost and found reporting, travel guide, so that customers can experience exquisite service with high satisfaction. If the content of the customer's question is beyond the scope that can be handled by the "Artificial Intelligence Customer Service," the "Artificial Intelligence Customer Service" will be transformed into a knowledge support role to assist the online real person text customer service, so as to shorten the time that passengers are required to wait and repeat the questions online, and provide passengers with more convenient and thoughtful services.

Before the launch of the "Artificial Intelligence Customer Service," all colleagues of the Company were invited to participate in the test experience to enrich the database of the "Artificial Intelligence Customer Service" with the feedback of the colleagues, so as to improve the accuracy of the system's response to problems, and the smoothness and stability of the service process. In 2021, the overall text service processing volume was increased, and nearly 85% of the text consultation services have been transferred to "Artificial Intelligence Customer Service" for response. This service has won the "Best Popular Brand" of the "18th National Brand Yushan Award" in 2021.

In order to achieve THSRC's 4T enterprise development vision, we continue to guide passengers to use "Artificial Intelligence Customer Service" for consultation, lost and found reporting, and assistance to search for progress through media publicity and customer service explanations, with an aim to expand customer contact points and improve service satisfaction, and to gradually drive "Artificial Intelligence Customer Service" to become the main communication channel. In the future, we will continue to add new digital service items, improve service capacity, and move towards a stable and innovative digital transformation.



Customer Affirmation

Customers' affirmation and feedback are important indicators for THSRC to review its own quality management performance. We commission third parties to investigate customer satisfaction every year. However, due to the impact of the COVID-19 in 2021, the Company continued to implement pandemic prevention measures such as restricting the occupancy rate, prohibiting eating and drinking, wearing masks at all times, and the real-name registration system, as well as short-term service reduction operations in collaboration with the government, resulting in the reduction or suspension of related services. Passengers were not able to receive the complete THSR service, which might affect the objectivity and reference of the survey results. Therefore, the passenger satisfaction questionnaire survey was temporarily suspended once in 2021. However, in order to actively respond to customer expectations, THSRC continue to take into account the survey results in 2020 and the customer feedback received on weekdays to optimize related measures, including:

- Improve the "comfort level of facilities and spaces" at the station: carry out the upgrading plan of toilet hardware facilities at each station, floor repair project of parking lot of each station, improvement of the bus platform pavement at Yunlin Station, rain cover project at Chiayi Station, replacement of lighting of unpaid area at Taipei Station with LED lights, and addition of elevators in the west side of Banqiao Station, in order to meet the needs of passengers.



Replacement of toilet facilities at each station with electric toilet seats

- Improve the "travel guide signs:" consolidate the indicators of transfer vehicles at the gate area of Nangang Station into a comprehensive indicator for posting; change the guide signs for the north direction platform at Taipei Main Station to thin LED light boxes, in order to clearly present information and improve passengers' recognition of relevant transfer information.



The guide sign for the north direction platform at Taipei Main Station is changed to a thin LED light box to improve the recognition of transfer information for arriving passengers

- Improve the "station ticketing service:" replace the business signs at the ticket counter windows of each station with electronic signboards, and adjust to display other information as necessary during the operation process, such as suspension of service, shift transfer, or support for other ticketing services.



The signs of ticket counters at each station are replaced with electronic signboards to respond to operational needs more quickly and accurately



Taiwan

Enhancing Local Connection

Taiwan

Enhancing Local Connection

Subchapter Title	Material Topics	Management Purpose	Management Method	Assessment Mechanism	Management Performance in 2021
Partner Relationship Management and Local Supply	Sustainable supply chain management	<ul style="list-style-type: none"> Avoid joint and several liabilities, even damage to the corporate image, incurred due to oversight of suppliers; work to move toward a more sustainable partnership with suppliers and partners. 	<ul style="list-style-type: none"> Include requirements regarding the environment, society, and corporate governance into management systems, such as supplier evaluation, visits and audits, commitment statement, etc. In each procurement plan, vendors are not allowed to violate national laws including the Labor Standards Act and environment-related regulations. Formulate safety and health policy to be followed in procurement cases and require vendors to meet occupational safety and health requirements when performing contracts. Establish rules for employees of contractors, to receive trainings and obtain safety certifications related to High Speed Rail Operations before entering workplaces. 	<ul style="list-style-type: none"> Relevant departments carry out vendor assessment, based on Vendor Self-evaluation Form, etc. Vendors may report any dispute arisen therein through established grievance channels, with the help of THSRC personnel. 	<ul style="list-style-type: none"> Handled a total of 956 procurement cases, where vendors complied with THSRC anti-corruption regulations. Collected a total of 677 corporate social responsibility commitment letters and 175 vendor self-assessment forms for corporate social responsibility commitment.
	Local economic development	<ul style="list-style-type: none"> Promote local economic growth through collaboration with local enterprises or institutions. Relevant practices include domestic train local manufacturing, local procurement, domestic tourism, support for native products by local small- and medium-sized business, as well as advocacy for localization of the rail industry. 	<ul style="list-style-type: none"> Build up railroad equipment and systems in joint hands with local authorities and enterprises. Actively implement local procurement. Stimulate local economy through development and supply of diversified regional tourism products. Offer lower rents for markets or stores selling local products at HSR station; narrow down gaps between urban and rural areas through strengthened economic ties. 	<ul style="list-style-type: none"> Evaluate performance based on local procurement amount, solution for alternative sourcing, and development of applicable equipment and systems. Keep track of fruits reaped of THSRC tourism products through analysis of tourist visits, business volume, traffic volume, and sales amount. 	<ul style="list-style-type: none"> Visited 366 local vendors and developed 191 alternative sourcing in 2021. Saved a total of about NT\$2.94 billion through joint work with 127 alternative materials-developing suppliers from 2011 to 2021. Cultivated a total of 70 to 75 sales personnel and achieved a revenue of more than NT\$100 million for local business in 2021.

Glide through Taiwan and Stretch Global Wide

Local Travel

Taiwan tourism was seriously hit by Coronavirus disease 2019 (hereinafter referred to as the COVID-19), with its high-speed railway passengers suffering a 42% drop to 1.473 million in 2021, compared to 2020. However, as the COVID-19 slowed down in September of 2021, THSRC has launched the “Quintuple Stimulus Vouchers” program as a response to the government’s “Quintuple Stimulus Vouchers” measure, which has successfully stirred up discussions in terms of marketing, and in turn driven the growth in the sales of tickets for THSR. The above-mentioned Program attracted nearly 210,000 tourists, hitting 123% of the goal, as intercity travel vigorously recovered.

Highlights: THSRC Quintuple Stimulus Voucher Program



The Program was launched in 30th Sep. 2021 following a similar measure announced by the authority. Promotion for the revitalization in tourism was carried out through advertisement online, social media, and channel vendors in the hope to arouse people’s desire to take THSR. The following incentives are offered by the Quintuple Stimulus Vouchers program:

1. Launched “THSR Five Star Package Tour” and “THSR Road Trip Deals” for T Holiday packages. Provided travel packages for round-trip tickets in full fare plus five-star hotel accommodation or discounts in 36-hour car rental. An additional 50%-off voucher for THSR tickets will also be offered for every TWD 5,000 spent.
2. Offered Hotel+Transport+THSR TourPlus Package Voucher, on top of double rewards points for TGo Membership; launched star-rated special itineraries with Michelin or Bib Gourmand features; attracted passengers and boosted domestic tourism.



Advertisement for THSR Quintuple Stimulus Voucher Program

As an experienced operator in the tourism industry, THSRC responds swiftly to market trend. Guided by its core concept of “Journey with THSR, Discover Taiwan,” it promotes a series of tour packages, including “T Holiday” planned by THSRC and commissioned to travel agencies, as well as package vouchers favored by independent travellers, such as “THSR+Hotel Combo Ticket” and “THSR+Bus/MRT Combo Ticket,” etc. Launched in 2021, THSR collaborates with Taiwan’s major online travel agencies to roll out “THSR TourPlus Package,” including Klook, KKday and EZtravel. By the collaboration with these domestic travel vendors, we anticipate a positive and extensive cooperation that continues to boost the dynamics on our sales performance as well as on regional economic developments.



THSR TourPlus Package

To promote travel products related to “Journey with THSR, Discover Taiwan,” THSRC participated in the 2021 Taipei International Travel Fair. With the overall design based on the brand spirit of “Be There” this year. We reused works from exhibitions, as well as optimized structure and space with low-carbon decoration to emphasize the corporate idea of “environmental sustainability.” At the souvenir section, there is a section dedicated to the co-branded “Taiwan High Speed Rail x Kanahei’s Small Animals” series souvenir merchandise. THSRC demonstrates its brand spirit “Be there” to people with co-branded products and scenario experience sections. With a variety of eye-catching features, THSRC stood out from the crowd of exhibitors and won the “Best Pavilion Award” for the second consecutive year.



THSRC won the “Best Pavilion Award” at the 2021 Taipei International Travel Fair

Industry Exchange

THSRC is committed to keeping up with the global tide and improving rail technologies, through technical visits, international observation and learning events, and local industry-academia collaboration. Technical visits and international observation and learning events in 2021 were postponed due to the COVID-19. Besides that, we have also actively joined international organizations, with major focus on topics, such as development of and promotion for rail industry, technology exchanges for civil engineering, and corporate governance.

In 2021, the corporation became member of 22 public associations (refer to Appendices Table 1 [↗](#)), where we maintained close partnership with domestic and foreign peer groups and strive to push the industry forward with joined hands. Since THSRC joined the International Union of Railways as a member in 2009, it has been exchanging experiences with railroad systems or operating organizations around the world by co-organizing seminars. In addition, THSRC will continue its participation in the organization’s “Climate Action Login Information Platform” under the United Nations Framework Convention on Climate Change (UNFCCC) to reduce emissions from railway transport, in response to the sustainability initiative for international low-carbon railway transport.

Local Industry-school Partnerships

THSRC draws on its rich industrial practices and utilizes its well-managed service training resources, during its diversified partnership endeavors with local colleges and universities, including academic year internship program, railway equipment laboratory and memorandum of industry-academia cooperation, with the intention to create a bright professional career for the students involved. In 2021, THSRC offered academic year internship program with 11 colleges and universities and year-long internship for station work for 30 students.



THSRC get a chance to enhance technical strength of local rail industry, through frequent discussions, project cooperation, as well as seminars. The Railway Equipment Laboratory was jointly established by the THSRC and National Kaohsiung University of Science and Technology in 2015, where over 32 systems and four exclusive instruments were developed. The laboratory achieved its monumental milestone with its equipment inspection procedures successfully certified by the Taiwan Accreditation Foundation (TAF) in August 2021. Meanwhile, the university provided an advance training course of “PCB Welding Practice under Military Specification and Visual Inspection Practical Course” for THSRC maintenance staff, to better satisfy THSRC’s maintenance needs. THSRC has signed memorandum of industry-academia cooperation with several Taiwan universities. Through research cooperation with academic institutions, we will accelerate the progress of localization of equipment parts and strengthen the independent maintenance capability of the rail industry, and we hope to recruit excellent potential talents through the cooperation of research projects.



Training Course for “PCB Welding Practice under Military Specification and Visual Inspection Practical Course”

Project	Colleges and Universities
Academic Year Internship	National Kaohsiung University of Hospitality and Tourism, National Pingtung University, National Kaohsiung University, Jingyi University, Chung Hua University, Chang Jung Christian University, Shih Chien University, Overseas Chinese University, Ling Tung University, China University of Science and Technology, and Vanung University
Railway Equipment Laboratory	National Kaohsiung University of Science and Technology
Memorandum of Industry-Academia Cooperation	National Kaohsiung University of Science and Technology, National Taipei University of Technology, National Cheng Kung University, and National Tsing Hua University

Partner Relationship Management and Local Supply

Supply Chain Management

To enhance the overall value chain sustainability performance, THSRC has formulated a “Supply Chain Management Policy” with reference to international industry standards to strengthen the supplier management mechanism by means of auditing, management and providing education and training to enhance supplier environmental, social and governance (ESG) performance. In addition, THSRC is also actively laying out the localization of its rail supply chain by increasing the proportion of local procurement, expanding the number of domestic suppliers, and establishing cooperation channels with universities and academic institutions in order to build a local supply chain of high speed rail materials and components with high quality.

Supply Chain Communication and Requirement

In 2021, THSRC formed ties with 722 suppliers, 499 of whom supply materials (mainly equipment parts and vehicle products), 223 service suppliers. For the goal of sustainability, we draft “Procurement Regulations.” Sustainability will be comprehensively evaluated by the management manual and precautions before signing off the Instructions. For any vendor who violates this yet refuses to rectify in specified period, cooperation shall be terminated. In 2021, there was no cooperation terminated due to vendors’ poor ESG performance. Since 2019, bidders are required to sign a corporate social responsibility commitment letter, stating their promise to comply with THSRC’s corporate social responsibility standards. Also, panel meeting is also held regularly to review self-assessment forms of current manufacturers. We had collected a total of 677 corporate social responsibility commitments and 175 corporate social responsibility commitment self assessment forms, and a total of 956 announced procurement cases had met THSRC’s anti-corruption regulations. For relevant regulations and specific requirements, please refer to the details of supplier management on the website. [🔗](#)

Localized Supply Chain

Local Development

THSRC pays multiple visits to vendors seeking for alternative regional materials, as its efforts to drive the growth of local rail technologies and capabilities. In 2021, we accomplished 191 alternative sourcing cases, after visits to a total of 366 local suppliers. The Company saved a total of about NT\$2.94 billion through joint work with 127 alternative materials-developing suppliers from 2011 to 2021. Further to that, THSRC also extends its work with government authorities and enterprises to technological innovations for high-speed railway equipment and systems. Such that, we aspire to contribute to localized rail transportation, with further ambition for the long-term goal of “Localization of Domestic Vehicles” Details for joint local development projects are as follows:

- Worked with China Steel Corporation on the project of “Overhead Catenary System Maintenance Vehicle Localization,” integrated equipment component specifications, pooled supplier resources, effectively reduced maintenance and inventory costs, and improved maintenance quality, since Sep. 2018. Delivered four maintenance vehicles in Nov. 2021; 12 more to be gradually delivered before 2024; scheduled to phase out old ones.
- Developed the “Bogie Running Tester” in joint efforts with the Industrial Technology Research Institute in Jul. 2019; enhanced maintenance efficiency and bogie reliability. Finished design review for the core system, substrate installation, main body assembly, and test room construction in 2021; completed operation tests, delivery and acceptance in May 2022.
- Invented “Diesel-Hydraulic Locomotive,” in joint hands with Taiwan Rolling Stock Company Ltd. in July 2019; strengthened response to operation incidents; completed its design and development by the end of 2020, started manufacturing of the body mechanism and control system, and expected to be delivered by the end of 2022.
- Developed “Taiwan Design Turnout Control System” in 2021; gradually removed German-made Turnout Switch Control cabinet; optimized circuit configuration and box design to prolonged service life of the equipment as well as improve its reliability. We plan to complete the placement of existing equipment till 2026.

Highlights: Launching Ceremony of Overhead Catenary System Maintenance Vehicle

The vehicles are engineered to fully meet the needs of on-site maintenance and urgent repair at low costs. In line with the government’s “Domestic Train Manufacturing Localization” policy, we work closely with local vendors hoping to enhance regional competitiveness. China Steel Corporation (CSC) is entrusted by THSRC to develop and manufacture catenary maintenance vehicles. After serious analysis of 6 types of catenary vehicles from Germany and Japan, CSC have successfully developed and manufactured “Multi-Function Vehicle” and “Catenary Stretch Motor/Catenary Stretch Trailer.” Driven by world-class environmentally friendly engines, these new types not only reduce the impact on the environment, but also offer more platform space. This guarantees safety and efficiency of maintenance personnel working at heights.

In addition, 60% of the main structure, bogie frame and vehicle components developed this time are produced domestically. By mastering our own maintenance technology, we are able to offer immediate rescue and troubleshooting to enhance operational safety.

The “Overhead Catenary System Maintenance Vehicle” project effectively integrates the strengths of Taiwan’s railway industry propped by the strategy of industrial alliance. In the future, we will continue to play a leading role in the railway industry. Joined by peer groups, we are committed to realizing the vision of “Domestic Vehicles Made by Compatriots will Create a Better Future for Taiwan!”



Launching Ceremony of Overhead Catenary System Maintenance Vehicle Localization

Highlights: Turnout Control Cabinet Replacement

THSRC launched the replacement program for “Programmable Logic Controller Turnout Control Cabinet” in 2021, as an endeavor to cut down switch failures and repair time. We work to remove and replace a total of 142 sets of existing Turnout Cabinet across the entire line. This program, solely designed by THSRC, was initially developed and manufactured in Taiwan. By doing that, we not only showcased our technological independence, but will also cut down maintenance costs. The turnout cabinet shows the following two characteristics:

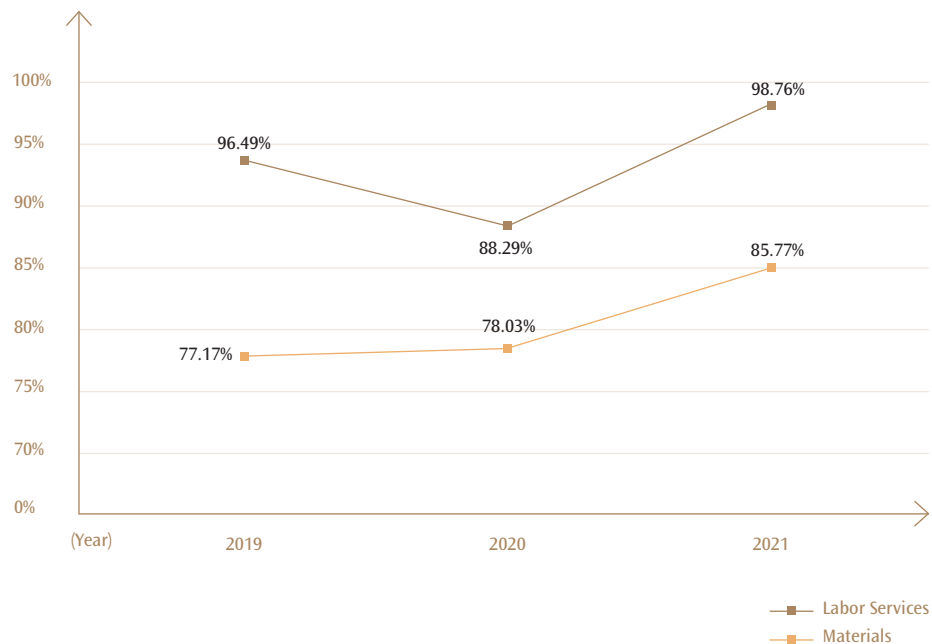
1. Extended service time: This design separates the high-voltage motor current circuit and the positioning detection current circuit. In this design, only low-voltage positioning current can pass through switch contacts in the Turnout, avoiding contact failure caused by mixing of the old high/low voltage and current. The change to air circulation convection can reduce damage to components in the chassis which may be otherwise caused by temperature or humidity factors. Both design changes tend to extend component lifetime.
2. Enhanced system stability: The design replaces all Siemens control boxes previously installed with locally developed switch control boxes; dual redundancy design built into the design can bring high reliability and high availability.

Local Procurement

In addition to actively developing localized technologies and equipment with Taiwan manufacturers, THSRC has also introduced localized procurement strategy, with insured equipment security. This not only reduces dependence on foreign suppliers, but also narrows down procurement costs and lead time of equipment replacement. Local suppliers may also get accredited by the International Railway Industry Standard Quality System for their established performance gained through the cooperation. They may get access to more business opportunities, with their corporate image and reputation greatly improved among domestic railway sector.

THSRC also actively works with local suppliers in the procurement of labor services and properties. In 2021, the total amount of material purchases conducted by THSRC was approximately NT\$1.8 billion, where the amount of procurement from local suppliers accounted for 85.77% of the total amount. Meanwhile, the amount of labor service procurement in 2021 exceeded NT\$5.2 billion, of which 98.76% came from local service procurement.

Percentage of Local Procurement



Local Business

THSRC has set up Taiwan-wide railway markets and stores selling products made from local raw materials and offering local options. This practice promotes growth of local industries and creates business opportunities for Small and Medium Enterprises. We have cultivated a total of 70 to 75 sales personnel^(Note) and achieved a revenue of more than NT\$100 million for local business in 2021. Considering less tourist visits as a result of the COVID-19, we also take the initiative to reduce the rental fees for station stores. From May to October 2021, the total rent reduction amounted to about NT\$113 million, as a relief support for businesses.



Note: In 2021, THSRC have recruited a total of 22 local businesses, with booth staff for each considered at 3 to 4.

Security Policy and Training

THSRC has hired a professional security company to offer professional training for its own security personnel, to guard the security of passengers, station personnel, as well as its own crews. Besides that, we have formulated security policies to specify security personnel's duties, including maintaining order at stations and on trains, ensuring passenger safety, and maintaining safe train operations, etc. Since 2020, THSRC began to hire people with experience in military, police, or special operations, or with qualified martial arts licenses. After professional training, they will serve as the "Train-Elite Security Guard" for THSR trains, to better safeguard passenger safety. We have also strengthened our communications with security companies, with regular bimonthly meetings. Such that, we expect our security personnel to abide by the company's security policy, while offering customer-oriented service. Security personnel training details are as follows:

Security Personnel Training Content

Training courses provided by THSRC	<ul style="list-style-type: none"> Customer service etiquette training Security equipment/system operation and emergency notification training Pre-service training, security service review training, and safety lectures Railway safety regulations (high-speed railway operation specification training) and disaster prevention training
Training courses provided by security companies	<ul style="list-style-type: none"> Traffic control and command, patrol skills, comprehensive application of boxing skills, and self-defense training Legal training related to personal security and arrest of offenders, to avoid infringement on human rights of passengers or third parties Basic training on the identification of suspicious packages and bomb threats training





Touch

Sustainable Care

Touch

Sustainable Care

Subchapter Title	Material Topics	Management Purpose	Management Method	Assessment Mechanism	Management Performance in 2021
Sustainable Governance and Ethical Corporate Management	Corporate governance	<ul style="list-style-type: none"> Enhance various corporate governance-related measures and legal compliance systems to ensure the sustainable operation of THSRC and reduce the risk of violation of laws and regulations. 	<ul style="list-style-type: none"> Establish the Corporate Governance Promotion Committee, which is overseen by the Chairman and chaired by the President, whereas executives from managerial departments serve as members of this committee. This committee regularly reports to the Board of Directors regarding the overall promotion and implementation of corporate governance at THSRC every year. 	<ul style="list-style-type: none"> Formulate the “Regulation of Self-Evaluation of the Board of Directors,” and implement internal self-assessment of the performance of the Board of Directors at the end of each year in accordance with this regulation. In addition, conduct external assessment at least once every three years. Participate in the Corporate Governance Assessment organized by Taiwan Stock Exchange Corporation and also undergo external assessment. 	<ul style="list-style-type: none"> Regularly convened meetings for review of the improvement situation based on internal and external assessment results to make continuous improvement. Ranked among the top 5% of listed companies in the “Corporate Governance Evaluation” for four consecutive years.
	Legal compliance		<ul style="list-style-type: none"> Set up a legal compliance team in the Legal Office and formulate a legal compliance promotion plan. Regularly convene a legal compliance representative meeting every quarter and require the Legal Office to report on the status of compliance at THSRC to the Audit Committee and the Board of Directors every year. 	<ul style="list-style-type: none"> Require the Legal Office to formulate and review work plan items every year, as well as compile and manage penalty cases, and require penalized units to report the status of handling such cases and improvement measures during compliance meetings every quarter. Require units at all levels to assess regularly the compliance risks, internal control design, and implementation effectiveness of their units in accordance with the internal control system and self-assessment regulations. 	<ul style="list-style-type: none"> In 2021, THSRC did not violate the laws and regulatory orders related to the “construction and operation of HSR,” “public companies,” and “environmental aspect.” In 2021, there were two salary incidents related to “economic and social aspects.” For relevant description and improvement measures, please refer to the subchapter “Legal Compliance.” 🔗
Low-carbon Train Operation and Environmental Sustainability	Climate change mitigation and adaptation	<ul style="list-style-type: none"> Enhance the ability of the transportation system to cope with climate change and implement energy conservation and carbon reduction measures to reduce the risks and hazards that may be caused by climate change to THSRC’s operations. 	<ul style="list-style-type: none"> In addition to establishing the Environment Management Committee, set up relevant units mainly in charge of operational safety risks and environmental risks in accordance with THSRC’s risk management policy to identify and manage climate change risks that may affect THSRC’s operations, as well as promote relevant response mechanisms and measures. Build an early warning system for slope and tunnel safety, continuously conduct safety monitoring and risk assessment, conduct investigations or improvement projects when necessary, and promote the drills for hypothetical scenarios. Promote greenhouse gas reduction policies and measures or formulate emission reduction targets and identify relevant needs for rail transportation and station operations in line with the relevant policies and requirements set forth by government agencies, including the Ministry of Transportation and Communications (MOTC) and the Ministry of Economic Affairs (MOEA). 	<ul style="list-style-type: none"> The Environmental Management Committee regularly reviews the accomplishment of short-, medium-, and long-term environmental management goals and strategies, assesses the gap between the goals set and the current situation, and reviews related mechanisms and measures accordingly. 	<ul style="list-style-type: none"> Obtained the renewed carbon footprint label certificate and reduction label certificate for THSRC transportation services; obtained the ISO 14064-1 Verification Opinion Statement. Reduced the carbon emissions per passenger-kilometer by 19.406% as compared with the carbon reduction benchmark value in 2021 (46.18 g of CO₂e per passenger-kilometer).
	Energy use efficiency	<ul style="list-style-type: none"> By implementing energy conservation and carbon reduction policies, reduce energy consumption during operation while strengthening the use of green energy. 	<ul style="list-style-type: none"> Continue to promote the four major energy conservation solutions, including “autonomous energy conservation management, reduce electricity consumption, transfer peak electricity usage, and use electricity reasonably” to improve the energy use efficiency during the operations. Establish the “Energy Conservation Project Team” to promote energy conservation measures at each THSR station, and to set the reduction of the annual “average electricity consumption per passenger served” by more than 0.86% as our management target. 	<ul style="list-style-type: none"> The Energy Conservation Project Team regularly convenes “Energy Conservation Meetings” every three months to track the implementation of energy conservation measures and analyze the achievement of annual energy conservation goals. 	<ul style="list-style-type: none"> Saved the annual average electricity conservation rate per passenger served by 12.380% as compared with the electricity conservation benchmark value in 2021 (2.387 kWh of electricity per passenger served).

Sustainable Care

Subchapter Title	Material Topics	Management Purpose	Management Method	Assessment Mechanism	Management Performance in 2021
Low-carbon Train Operation and Environmental Sustainability	Resource management	<ul style="list-style-type: none"> Build a green life circle for low-carbon transportation while strengthening the management of water resources and waste to make substantive contributions to environmental protection. 	<ul style="list-style-type: none"> Regularly review and revise the water management policy through the "Energy Conservation Project Team" and comply with the "Water Pollution Prevention and Control Measures Plan" and the "Industrial Waste Clean-up Plan" to treat effluent and waste. 	<ul style="list-style-type: none"> Track the implementation of various water conservation measures through regular (quarterly) water conservation effectiveness review meetings. Track and check the process of waste based on the waste clean-up receipt and regularly file a report on the quantity of waste processed online; the storage facilities for business waste also comply with the relevant requirements of the Environmental Protection Administration's "Methods and Facilities Standards for the Storage, Clearance, and Disposal of Industrial Waste." 	<ul style="list-style-type: none"> The water consumption per passenger from THSR station services was reduced by 17.170% (0.013 cubic meters of water consumption per passenger served) as compared with the benchmark value of water conservation in 2021. The recycling rate of resources and waste was 27.1%, and no leakage of oil, fuel, chemical substances, or waste occurred.
	Ecological impact management	<ul style="list-style-type: none"> Carry out environmental monitoring and environmental protection work to maintain the ecology, natural environment, and conservation mechanism around the operating facilities and the track to reduce environmental impact. 	<ul style="list-style-type: none"> Formulate the "THSRC Environmental Protection Specification" as the environmental protection operation standard during the construction of the high-speed railway to manage the environmental quality along the THSR tracks during the construction period. Continue to prevent or mitigate the possible impact on the environment caused by the activities related to high-speed railway system through the Company's environmental management system, so that all environmental protection prevention and control projects meet the requirements of environmental protection laws and regulations. 	<ul style="list-style-type: none"> Accept the review and evaluation of government agencies such as the Ministry of Transportation and Communications (MOTC) and the Environmental Protection Administration (EPA), and formulate relevant measures to reduce environmental impact based on the evaluation results. Conduct the internal environmental quality management audit operation according to the "Management System Internal Audit Regulation," and the audit scope includes environmental quality management units such as bases and stations. 	<ul style="list-style-type: none"> In 2021, three internal audits were conducted, and follow-up improvement matters were reported to the Environmental Management Committee regularly; externally, the audit was conducted by the environmental protection unit. In 2021, there was no penalty imposed due to the pollution of the environment.
Nurturing Talent and Value Cultivation	Talent appointment and development	<ul style="list-style-type: none"> Recruit personnel in a timely manner based on business needs and manpower planning, and provide relevant training on knowledge, skills and work attitudes required for the job to ensure that the recruited employees meet job requirements. 	<ul style="list-style-type: none"> Formulate management regulations and methods related to manpower management and training as the basis for planning for external recruitment and appointment, internal career development and promotion, and relevant training programs. 	<ul style="list-style-type: none"> Refer to management reports and convene training coordination meetings regularly to review the implementation results, such as evaluation of training plans, budgets, licenses, and relevant feedback, and to put forth improvement measures. 	<ul style="list-style-type: none"> Training on employees' core competencies, management competencies and professional competencies were all implemented as per the annual training plan. The average training hours per person in 2021 was 119.0.
Protection of Rights and Considerate Care	Employee care and labor protection	<ul style="list-style-type: none"> Ensure the physical and mental health of employees, and reduce workplace hazards by creating a healthy and friendly workplace and establishing multiple grievance channels, so as to provide employees a safe, equal, and high-quality work environment. 	<ul style="list-style-type: none"> Establish the "Mental Health Protection Regulation," as well as conduct relevant mental health talks or training courses for employees, irregularly impart mental health knowledge through electronic bulletin boards, or promote grievance and reporting mechanisms for employee mental health protection at various settings such as new employee training. Establish the "Sexual Harassment Prevention and Handling Regulation" (including grievance and reporting process), and enhance efforts to raise awareness towards the prevention of sexual harassment among employees in accordance with the Act of Gender Equality in Employment and by referencing the Regulations for Establishing Measures of Prevention, Correction, Complaint and Punishment of Sexual Harassment at Workplace. Convene labor-management meetings regularly and discuss the Company's various issues with the THSRC Labor Union monthly. Establish and implement the "Grievance Regulations" for employees to effectively implement management policies and maintain harmonious employee relations. Convene the "Occupational Safety and Health Committee" meetings regularly to deliberate and make decisions on material occupational safety and health issues within the Company. Establish "safety and health policies," and occupation disaster notification process, and regularly convene occupation safety and health committee meetings. 	<ul style="list-style-type: none"> Regularly inspect grievance and reporting mechanisms for employee protection, as well as feedback on mental health talks and training courses, to understand employee needs and develop relevant plans based on these needs. Set quantifiable and trackable safety and health management indicators for employees and contracted suppliers and adopt regular or random inspections and audit mechanisms to implement internal safety and health management mechanisms. And establish a complete report system in order to effectively cope with and reduce negative impacts during occupational disasters. 	<ul style="list-style-type: none"> A total of 574 employees participated in the employee mental health lectures and training courses, and a total of 242 employee care sessions were organized. There was one occupational accident in the workplace, with the frequency-severity indicator of 0.01, and 21 traffic accidents outside of the workplace, with the frequency-severity indicator of 1.01, and no occupational disease occurred.

Sustainable Governance and Ethical Corporate Management

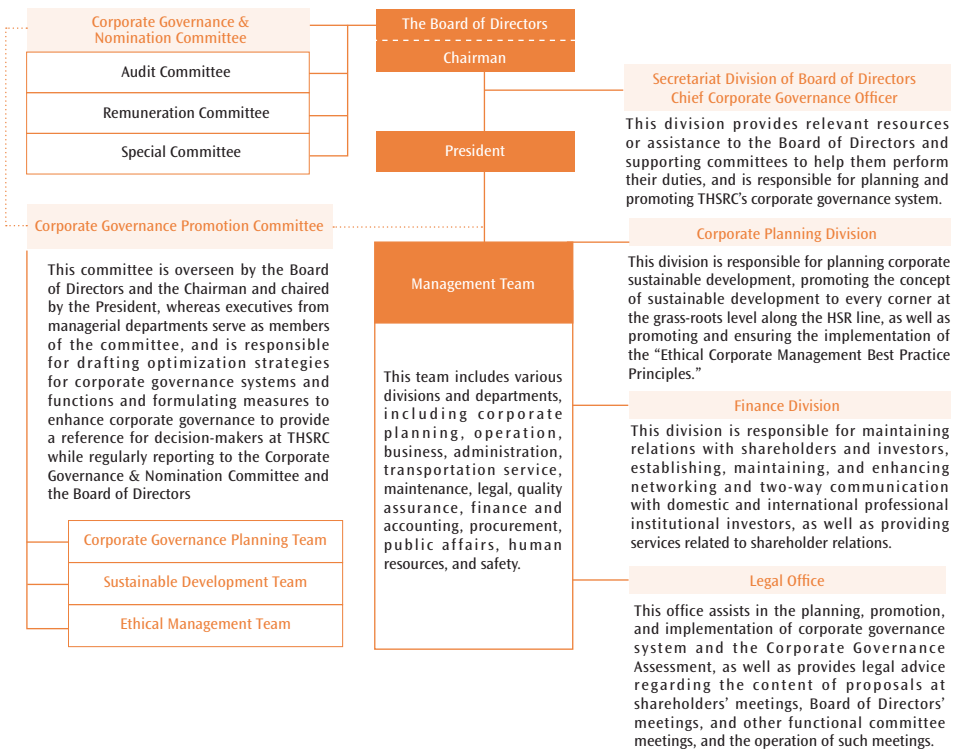
Corporate Governance Structure and Committee

THSRC firmly believes that well thought-out, transparent, and efficient corporate governance is the foundation for pursuing steady development, continuously improving operational safety and sustainable performance, and further creating sustainable value. The Company complies with domestic laws and regulations to establish the “Guidelines for Corporate Governance,” and has established the Board of Directors and various functional committees under it to optimize the overall governance effectiveness of the Company through various management mechanisms.

In response to information disclosure and communication in all aspects of the sustainability strategy, THSRC also has established a “Corporate Governance Promotion Committee” to promote relevant issues through its corporate governance planning team, sustainable development team, and ethical management team. The main issues discussed in 2021 covered the implementation status of human rights management, corporate governance, corporate social responsibility, ethical corporate management, information security management and system, legal compliance, and risk management. Others included reports on investor relations enhancement plans, and strategic planning for material corporate governance matters. For more information on the responsibilities of the “Corporate Governance Promotion Committee” and its operations in 2021, please refer to “Corporate Governance Structure.”

THSRC makes efforts to promote corporate governance systems and measures, and has been ranked among the top 5% of listed companies in the “Corporate Governance Evaluation” for four consecutive years. In the future, THSRC will continue to play the role of corporate governance structure, actively implement communication with stakeholders, and continue to practice rigorous corporate governance strategies. For other information related to corporate governance, please refer to the “Corporate Governance Structure” and THSRC’s annual reports, corporate website and the Market Observation Post System (MOPS).

Corporate Governance Structure Chart



Responsibilities of the Board of Directors and Information on Board Members

The Board of Directors is THSRC’s highest governance unit. Its main powers and responsibilities include the powers conferred by the relevant laws and regulations and the shareholders’ meeting, reviewing important regulations, business plans, budget, financial statements, and important business, as well as supervising the execution results of the management and guiding the management team. Per the provisions of the THSRC’s Guidelines for Corporate Governance, the Board of Directors shall meet at least once every two months. A total of 12 meetings were conducted in 2021 to resolve decisions regarding the economic, environmental, and social issues discussed by the functional committees. For details of directors’ attendance, please refer to page 64 of the annual report.

The composition of THSRC’s Board of Directors is diverse, including different industrial, academic and legal professional background. Currently, there are 13 directors (including 4 independent directors) on the Board, of which male directors accounted for 85% (11 persons) and female ones accounted for 15% (2 persons); while the age distribution was: 23% (3 persons) of the Board was under 60 years old, 15% (2 persons) over 60 years old and under 65 years old, and 62% (8 persons) over 65 years old. The term of office of the directors is three years (this session starts from the election at the annual shareholders’ meeting on May 21, 2020, and ends on May 20, 2023). For information on the members of the Board of Directors, please refer to Appendices Table 2. For other related information, please refer to THSRC’s annual report.

Functional Committees

Functional committees have been set up under THSRC’s Board of Directors, including the “Corporate Governance and Nomination Committee,” “Audit Committee,” “Remuneration Committee,” and “Special Committee” to assist the Board of Directors in performing its supervisory and guiding responsibilities and convene meetings to implement the responsibilities conferred by the regulations, and discuss relevant issues, and submit conclusions and recommendations to the Board of Directors for resolution. Please refer to the table below for the description of each functional committee’s responsibilities and the issues discussed in 2021. For details of operations, please refer to “Operations of Functional Committees.”

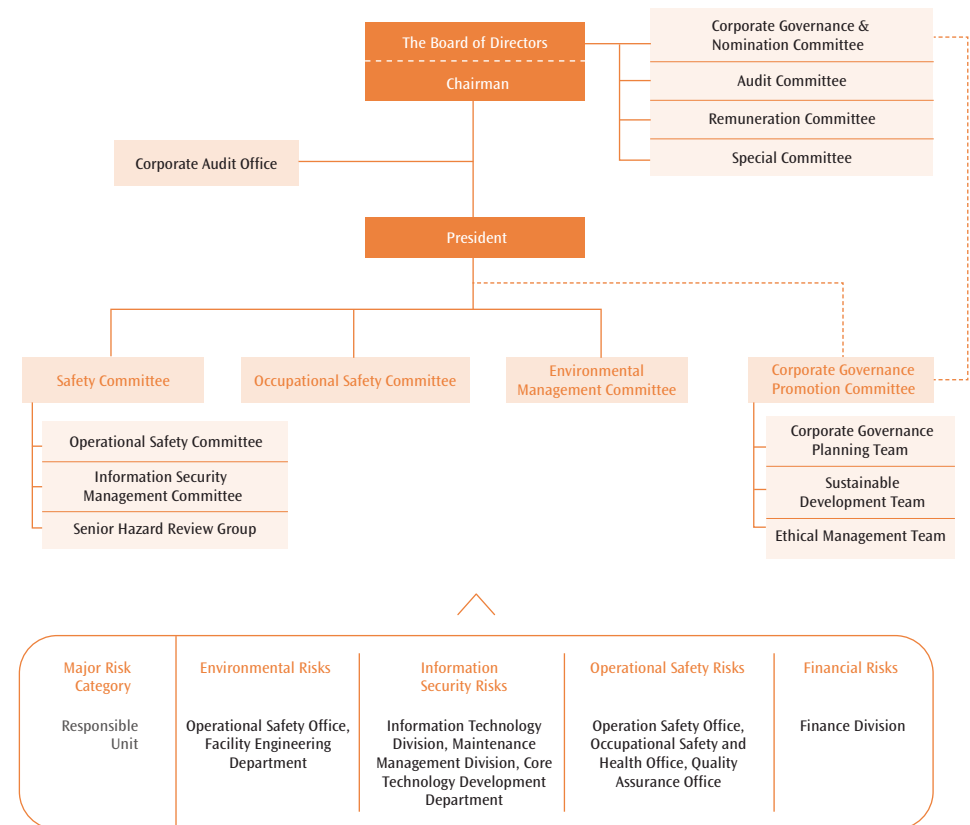
Economic	E.g., finances, integrity, anti-corruption, corporate governance, management, etc.
Environmental	E.g., energy conservation and carbon reduction, renewable energy generation devices, waste disposal, ecological conservation, etc.
Social	E.g., donations, public welfare activities, community communication, labor rights issues, employee education and benefits, customer safety and health, etc.

Committees	Performance of functions	Some Issues discussed in 2021	Economic	Environmental	Social
Corporate Governance and Nomination Committee	1. Review the professional knowledge, techniques, and experience required by independent directors, non-independent directors, and managers, and their diverse backgrounds such as gender and independent criteria	• 2021 corporate governance system, corporate social responsibility (including environmental and social aspects), report on the operation of ethical management and implementation status, and report on corporate governance status	✓	✓	✓
	2. Responsible for the nomination of directors, as well as the planning and assessment of potential director candidates	• Report on the review of THSRC’s information disclosure system	✓		
	3. Plan and review the performance of duties by all directors	• Report on the results of self-evaluation of the Board of Directors’ performance	✓		
	4. Responsible for planning suggestions and effectiveness reviews of corporate governance systems	• Report on the self-assessment of the Corporate Governance Evaluation	✓		
		• Performance goal setting and evaluation result reporting for managers	✓		
		• Succession mechanism for important levels of management	✓		

Committees	Performance of functions	Some Issues discussed in 2021	Economic	Environ- mental	Social
Corporate Governance and Nomination Committee	5. Has established a corporate governance planning team, a sustainable development team and an ethical management team to promote relevant issues. The main issues discussed in 2021 covered the implementation status of human rights management, corporate governance, corporate social responsibility, ethical management, information security management and system, legal compliance, and risk management	<ul style="list-style-type: none"> Amendment to the Company's "Code of Practice on Corporate Social Responsibility" Amendment to the Company's "Information Disclosure Management Measures" Amendment to the Company's "Regulation of Self-Evaluation of the Board of Directors" Report on the implementation of corporate governance 	✓		✓
Audit Committee	<ul style="list-style-type: none"> 1. Formulate or amend the internal control system in accordance with the Securities and Exchange Act 2. Review major asset and derivative trading, loaning of funds, and provision of endorsements or guarantees 3. Review annual financial statements and assess company risk management policies, metrics, and compliance 	<ul style="list-style-type: none"> Report on the implementation of corporate governance Performance goal setting and evaluation result reporting for managers Report on the legal compliance system and its implementation Amendment to the "Internal Control System" and the "General-Rules of Internal Control Self-assessments" Perform self-assessment of internal control system results Report on the implementation progress related to risk management, including environmental risk control Report on the implementation of information security governance and management Annual donation and sponsorship programs Amendment to the Company's "Regulations for Management of the Prevention of Insider Trading" 	✓	✓	✓
Remuneration Committee	<ul style="list-style-type: none"> 1. Regularly review the policies, systems, standards, and structures of performance evaluation, salary and remuneration for directors and managers 2. Regularly assess and formulate the salary and remuneration for directors and managers 	<ul style="list-style-type: none"> Proposal for salary adjustment Report on the results of self-evaluation of the Board of Directors' performance Suggestions on the distribution of employee and director compensation Performance goal setting and evaluation result reporting for managers Suggestions on subsidies and bonuses related to employee benefits 	✓		✓
Special Committee	1. Provide counsel and suggestions on major legal or contractual disputes and important institutional changes in the Company	<ul style="list-style-type: none"> Report on localization and the Development of Original Equipment Manufacturer (OEM) Sources Procurement of equipment and materials from local suppliers for domestic development and support Optimization and improvement of software and hardware facilities to maintain customer safety The Company executed an agreement with the corporate trade union group of Taiwan High Speed Rail Corporation 	✓		✓

Sustainable Risk Management

Risk management is a key factor for enterprises to pursue sustainable operation. In the aspect of environmental, social, corporate governance and new forms of risk that are increasing day by day, THSRC integrates the recommendations of committees at all levels, creates risk management operating mechanism, and formulates THSRC's internal "Risk Management Policy," and the management unit is responsible for monitoring related risks and reporting the operation status to the Board of Directors once a year. In 2021, the Audit Committee and the Board of Directors reported the implementation status and progress of annual risk management, and the responsible management unit has taken appropriate response measures for relevant risks and made records accordingly. The risk management unit will continue to review and revise new risk management policies in response to changes in internal and external environmental conditions, with the aim of strengthening the risk awareness of THSRC through the implementation of medium- and long-term risk strategic plans and goals, and moving towards the vision of sustainable operation.



Considering various aspects related to company operations, such as business environment, operation, finance, and hazardous events, THSRC has identified four risk categories including “environmental,” “operational safety,” “information security” and “financial” according to the principle of materiality. Meanwhile, we review the integrity of internal risk management and the effectiveness of risk control, check and identify risks that may affect operations and profitability, and enhance response measures for related risks. The identification results, relevant response measures and actions, key performance indicators, and 2021 actual results of major risk categories of THSRC are listed as follows. In order to mitigate the potential financial impacts of declined revenue and increased work costs caused by various risk factors, THSRC has comprehensively planned for the operating asset insurance and business interruption insurance to cover various risk factors, such as natural disasters as well as man-made and equipment abnormalities to properly respond to risks.

Topic	Major Risk Category	Risk Implications	Relevant Response Measures and Actions	Key Performance Indicators	2021 Performance
Environmental	Environmental Risks	Assess various environmental risk patterns that may cause regulatory amendments, system damage, regional power outages, water shortages, etc., which will affect service quality and increase maintenance costs, such as the greenhouse effect, extreme climate events, earthquakes, land subsidence, new faults, etc.	<ol style="list-style-type: none"> 1. Formulate environmental policies and conduct management in accordance with the environmental management manual; has passed the certification of the environmental management system ISO 14001 2. Identify climate change risks, forecast future medium- and long-term climate change risks, formulate energy conservation plan and measures, and work with professional institutions to analyze and formulate adaptation strategies in response to climate change, in order to effectively reduce the possible operational impact of climate change on THSRC 3. Collaborate with professional institutions to establish an earthquake early warning system 4. Conduct assessment of land subsidence, new faults, flood control, and earthquake resistance capability, as well as study and plan for improvement needs 5. Adopt the Disaster Warning System to keep abreast of the status of environmental disasters, perform annual disaster prevention audits, and organize regular and random large drills 	Formulate indicators and goals related to environmental management, ecological conservation, waste management, energy management, water resource management, and greenhouse gas management (please refer to the table titled “Short-, Medium-, and Long-term Environmental Management Goals and Strategies” in the subchapter titled “Environmental Sustainability Strategies”)	<ul style="list-style-type: none"> • There was a total of 45 subsidence incidents of civil structures (including bridges, subgrades, and tunnels) that exceeded the management value, and follow-up response measures have been taken • Promote the overall inspection plan for THSRC’s slope safety in response to the slope collapse incident on the east side of the TK126+100 Miaoli Tongxiao section • In March, flood control preparations were initiated, and a typhoon prevention and flood control response mechanism was established according to the potential flooding in the station and tunnel section
Social	Operational Safety Risks	In the THSRC system, facility and equipment failure, human negligence, sabotage or other external factors may affect train safety, which in return harm employees, passengers, contractors, and the public or result in delay or interruptions in railway operations	<ol style="list-style-type: none"> 1. Formulate safety and health policy, corporate quality policy, and configuration management policy, as well as manage these policies in accordance with the Operation Safety Plan, the Occupational Safety and Health Management Manual, the Corporate Quality Manual, the High Speed Rail System Configuration Management Manual, the Corporate Reliability, Availability, Maintainability and Safety (RAMS) Manual, the Railway Operation Security Management Plan, and the Corporate Safety Assurance Plan 2. Establish the Operational Safety Committee and the Occupational Safety and Health Committee that meet regularly every quarter 3. Perform internal audit and safety inspections of railway operation safety, occupational safety and health, quality management, configuration management, system assurance, etc. 4. Conduct railway safety training, occupational safety and health training, hazard management training, and disaster prevention and rescue drills (training) 	<ol style="list-style-type: none"> 1. Percentage of configuration monitored items [please refer to the subchapter titled “Quality Management System (QMS)”] 2. Four major quality performance indicators (please refer to the subchapter titled “Quality Management Performance Review”) 3. Inspection cycle and number of trainsets maintained (please refer to the subchapter titled “Station and Route Safety and Risk Management”) 	<ul style="list-style-type: none"> • Completed 35 disaster prevention and rescue drills (training) in the first half of the year • In response to the impact of Coronavirus disease 2019 (hereinafter referred to as COVID-19), corresponding operations and pandemic prevention measures have been taken
Corporate Governance	Information Security Risks	THSRC is Taiwan’s key information infrastructure provider and is listed as an agency of cyber security responsibility Level A in Taiwan. Therefore, the confidentiality, integrity, availability, and legal compliance of the THSRC information system are the key risk considerations for our information security	<ol style="list-style-type: none"> 1. Formulate information security policy and computer software intellectual property protection policy, which are managed in accordance with the Information Security Management Manual 2. Establish the Information Security Management Committee, which convenes a review meeting regularly every six months 3. Establish a management operation system in accordance with the ISO 27001 Information Security Management Standards 4. Implement internal audit, drill assessment, information security diagnosis, penetration test, defense in depth, education and training regarding information security in accordance with the requirements for agencies of cyber security responsibility Level A in Taiwan 	<ol style="list-style-type: none"> 1. Personal information inventory count 2. Number of related awareness programs, and education and training sessions held and training completion rate 3. Review through regular meetings 	<ul style="list-style-type: none"> • Submitted the 2021 report on the implementation of information security governance and management to the Board of Directors • Reviewed the information security policy, continued to maintain third-party certification and expanded the scope to all core information communication systems in accordance with regulatory requirements. In 2021, two internal information security audits were conducted
	Financial Risks	Changes in the economic and financial situation at home and abroad will affect THSRC’s revenue, maintenance and operation costs, interest rates, and exchange rates, thereby affecting THSRC’s profit or loss and cash flow	<ol style="list-style-type: none"> 1. Comply with the relevant provisions of the “International Financial Reporting Standards (IFRS),” the “International Accounting Standards (IAS),” and government regulations 2. The competent authority conducts regular annual financial review 3. Managerial departments review budgets every month and report them to the Board of Directors every six months 4. Regularly produce quarterly and annual financial statements 5. The Board of Directors reviews important financial activities in accordance with relevant laws and regulations and internal control systems 	<ol style="list-style-type: none"> 1. Cumulative revenue 2. Net income after tax 	<ul style="list-style-type: none"> • Submitted financial reports to the Board of Directors every quarter, and budget execution reports to the Board of Directors every six months • Submitted the THSRC’s financial solution implementation effectiveness checklist, budget and financial modules checklist, and THSRC’s financial audit report during the planned operation period to the Ministry of Transportation and Communications • In response to the lower-than-expected revenue due to COVID-19, promoted cost-saving measures, postponed advanced repayment plan, and sought the government to expand the application of relief subsidies

In order to respond to the emerging risk and cultivate the risk awareness and cognition of THSRC's colleagues, THSRC arranged risk-related internal and external courses as follows. In 2021, 4,970 people were trained, with a total of 5,820 hours.

- Risk-oriented Internal Auditing Methods and Practices
- Occupational Safety & Health Hazard Identification, Risk Assessment, and Risk Control Procedure
- Exchange Rate Risk Management and Accounting Treatment
- Information Asset Collection, Risk Assessment and Operational Impact Education and Training
- Customer Value and Risky Buying and Risky Selling
- General Safety and Health Education and Training
- Information Security General Course_ Awareness of Ransomware and Risk and Application of Deepfake under the Pandemic
- IEC62443 Industrial Control Network Security and Risk Management Course

Legal Compliance

In order to cultivate employees' awareness and culture of legal compliance, THSRC has drafted relevant regulations and guidelines in accordance to the laws and regulations of the competent authorities, set out a legal compliance policy, specific implementation goals and management mechanisms, and included the implementation results of the legal compliance system into our internal control system, requiring employees to self-assess the compliance situation, where each unit assesses compliance risks. In 2021, the average risk level evaluated by each unit was medium to high, and implementation effectiveness of risk control at each unit was highly effective. Meanwhile, the results were submitted to the supervisors of each unit for audit according to the internal control system review mechanism.

THSRC also reviews applicable laws and regulations regularly on a quarterly basis, files cases to the competent authority for adjudication, and convenes representative meetings on compliance with the aim of continuously improving and tracking compliance in a rolling manner through both internal and external approaches and building an environment for THSRC to comply with laws. The status of compliance at THSRC in 2021 is described as follows:

- Important laws and regulations related to the construction and operation of THSRC:
In 2021, there were no violations of the following laws and regulations, including the Railway Act and sub-laws thereof, the Statute for Encouragement of Private Participation in Transportation Infrastructure Projects, the Act for Promotion of Private Participation in Infrastructure Projects, and the Fair Trade Act.
- Important laws and regulations related to public companies:
In 2021, there were no violations of the following important laws and regulations, including the Company Act, the Securities and Exchange Act, the Regulations Governing Procedure for Board of Directors Meetings of Public Companies, the Regulations Governing Establishment of Internal Control Systems by Public Companies, and other laws and regulations related to corporate governance, such as ethical management and information disclosure.
- Laws and regulations related to "economic and social aspects":
Including the Income Tax Act, the Labor Standards Act, the Statute for Industrial Innovation, the Fire Services Act, the Labor Standards Act, the Consumer Protection Act and other laws and regulations. In 2021, THSRC has paid fines for two penalty/punishment cases, and completed improvements to the violation, and enhanced relevant management measures. However, the cases did not have a material impact on THSRC's overall operations:
 - As a unit failed to pay attention to the application period for overtime pay, THSRC failed to pay employees overtime pay for working on national holidays as scheduled, thus violating the provisions of Article 39 of the Labor Standards Act, and was imposed with a fine of NT\$200,000 by the Department of Labor, Taipei City Government. The Company has strengthened its publicity to the supervisors of various units through the internal system to comply with relevant laws and regulations so as to prevent similar incidents from recurring.
 - As a unit failed to pay attention to the deadline for withholding and filing various incomes, THSRC submitted the list of winners for an online Q&A activity for the king of the safety and health knowledge conducted in 2020 to the Company's accounting management unit later than May 2021, and retroactively filed a tax return with the National Taxation Bureau of Taipei, Ministry of Finance. The tax authority determined that the tax filing was overdue and issued a penalty order, with a fine of NT\$750. The Company has reminded all units of the tax filing process and filing deadline through the internal system, and emphasized the explanation in the meeting to enhance compliance among employees so as to prevent similar man-made errors from recurring.
- Laws and regulations related to the "environmental aspect": In 2021, there were no violations of the following important laws and regulations, including the Building Act, the Environmental Impact Assessment Act, the Soil and Water Conservation Act, the Water Pollution Control Act, the Air Pollution Control Act, the Noise Control Act, and the Waste Disposal Act.

In 2021, THSRC was not involved in any non-compliance events, such as penalties, resulted from the violation of regulations related to marketing and labeling of products and services.

Ethical Management and Anti-Corruption

THSRC firmly believes that integrity and honesty and transparent governance are the foundation of corporate operations. We have formulated relevant internal codes of conduct such as "Ethical Corporate Management Best Practice Principles," "Code of Ethical Conduct" and "Employee Code of Conduct," and increased all employees' awareness of anti-corruption through relevant education and training so as to actively prevent conducts that violate integrity and internal norms. In 2021, no anti-corruption education and training for the Board of Directors was held due to COVID-19. However, if the competent authority releases relevant anti-corruption information or new laws and regulations, we will provide relevant information to the Board of Directors through written materials. The number of participants and hours of education and training related to ethical management and anti-corruption organized for new employees and all employees are listed below:

- The total number of new employees participating in the anti-corruption policy promotion sessions was 159, accounting for 3.4% of all employees.
- A total of 4,668 people participated in the digital training courses on ethics, integrity, and insider trading prevention, accounting for 100% of all employees, with a total of 4,668 hours.

THSRC has set up the "Ethical Management Complaint Mechanism" and the "Regulation of Whistle-Blowing System for Unlawful, Unethical Conduct and Dishonesty Behavior," which are handled by the Company's spokesperson and the Internal Audit Office, respectively. For details of complaint channels and contact information, please refer to THSRC's corporate website. In 2021, there were no material violations of the regulations with penalties imposed by the competent authority due to corruption, and there were no relevant complaints. In the future, we will continue to maintain the highest standards of Ethical management.

In view of the fact that suppliers are THSRC's important partners, the Company has formulated the "Principles of Handling Unusual Conduct Among Manufacturers," "Procurement Regulations," and relevant sub-laws to regulate suppliers' integrity conduct while indicating the anti-corruption policies and procedures in the bidding instructions to ensure a fair, just and open bidding process. In case of violations, suppliers shall be required to make an explanation, and those with material violations may be blacklisted. In 2021, THSRC announced anti-corruption policies in a total of 956 procurement bidding cases. There were no cases of suppliers' violation of Ethical management.

Low-carbon Train Operation and Environmental Sustainability Environmental Sustainability Strategies

In order to effectively manage the THSRC's sustainable performance of environment aspects and implement environmental protection work, the Company has set up an "Environmental Management Committee" with THSRC's Chairman as the convener, and composed of the executives of each department or division, to supervise the setting and implementation of internal environmental policies and targets. In 2021, the Environmental Management Committee conducted a total of three audits on environmental quality management to check the actual performance of each depot and HSR station in promoting the environment, and held an "environmental management work meeting" every quarter to track the progress and performance of each department in promoting environmental projects to maintain the operation of the environmental management system, and continued to promote measures to effectively mitigate environmental impact in compliance with the requirements of environmental regulations. In 2020, THSRC passed the ISO 14001 environmental management system certification to become the first company in the rail service industry in the country to have passed this certification, implementing the concept of environmental protection in our operation. In 2021, we passed the ISO 14001 environmental management system re-examination to ensure the effectiveness of the implementation of environmental sustainability management.

Operation and Responsibilities of Environmental Management Committee

Chairman	Environmental Management Committee	Working Group
Define environmental policies and take responsibility for the effectiveness of the environmental management system.	The President chairs the committee, while the committee is composed of top-level managers in various divisions and offices, including corporate planning, logistics, maintenance, procurement, operation, information, and human resources. The committee supervises the implementation of environmental management at each unit and communicate operations related to the environmental management system from the overall perspective of THSRC.	The group includes departments, such as corporate planning, operation, logistics, maintenance, procurement, human resources, and operational safety, and is responsible for operations related to the environmental management system within the scope of its duties.

Environmental Protection Expenditure in 2021





Unit: NT\$ thousands











Environmental Protection Measure	2019	2020	2021
Environmental impact assessment and monitoring (including Miaoli Station, Changhua Station, and Yunlin Station)	2,769	2,730	1,880
Environmental protection research (including Pheasant-Tailed Jacana preservation, greenhouse gas inventory check, and noise research ^(Note) and improvement plan)	2,980	5,458	4,529
Environmental pollution prevention (wastewater and waste treatment operation and maintenance at stations and maintenance depots)	60,014	62,509	87,836
Total	65,763	70,697	94,245

Note: Please refer to the subchapter titled “Sustainability Commitment” subsection under the Chapter of “Transportation” for relevant information on noise control.

Targets and Strategies

THSRC sets targets for internal sustainability issues which cover five aspects: environmental management, greenhouse gas management, ecological conservation, waste management and water resources management, and has formulated short-, medium- and long-term environmental management targets and strategies. Please refer to the table below for details:

Period		Goal	Environmental Management Strategy	Achievements in 2021
Short-Term (till 2021)	 Environmental Management	<ul style="list-style-type: none"> Comply with environmental protection and environment impact assessment regulatory requirements Conduct education and training for environmental protection personnel Maintain the validity of the Environmental Management System ISO 14001 certification 	<ul style="list-style-type: none"> Implement environmental management, environmental monitoring, and environmental protection in compliance with laws and regulations Conduct environmental protection education and training for environmental management representatives and related personnel at each unit, and strengthen their familiarity with environmental protection regulations and related execution capabilities Maintain the operation of the environmental management system through performance assessment, management review, external audit, and continuous improvement, so as to continue to maintain the validity ISO 14001 certification process 	<ul style="list-style-type: none"> There were no sanction cases of violation of environmental protection and the Environmental Impact Assessment in 2021 Passed the ISO 14001 re-examination
	 Greenhouse Gas Management	<ul style="list-style-type: none"> Extend the validity period of the High Speed Rail Transportation Service Carbon Footprint Obtained the ISO 14064-1 Verification Opinion Statement for greenhouse gas emissions at HSR stations in 2020 	<ul style="list-style-type: none"> Handling of “Low Carbon Product Award” for carbon footprint of high-speed railroad transportation service products Conduct greenhouse gas emission inventory audit and external verification at HSR stations in 2020 	<ul style="list-style-type: none"> Received the “2021 Annual Low Carbon Product Award” Merit Award and an award of \$100,000 from the Environmental Protection Administration (EPA) All HSR stations have completed the greenhouse gas emissions inventory audit and verification in 2020, obtained the ISO 14064-1 Verification Opinion Statement
	 Ecological Conservation	<ul style="list-style-type: none"> Assist in Pheasant-Tailed Jacana preservation work in Guantian, Tainan 	<ul style="list-style-type: none"> Continue to sponsor the Pheasant-Tailed Jacana Ecological Education Park 	<ul style="list-style-type: none"> Continued to sponsor the Pheasant-Tailed Jacana Ecological Education Park and invested more than 1.143 million NTD in 2021
	 Waste Management	<ul style="list-style-type: none"> Strengthen waste reduction, implement waste sorting, and actively recycle resources and waste 	<ul style="list-style-type: none"> Create awareness of the concept of circular supply and resource recycling, promote waste reduction at the source, and strengthen waste sorting and recycling 	<ul style="list-style-type: none"> The amount of waste recycled reached 1,613.104 metric tons, with a recycling rate of approximately 27.1%. In 2021, no breach of contract occurred, and no leakage of oil, fuel, chemical substances, or waste occurred




Period		Goal	Environmental Management Strategy	Achievements in 2021
Short-Term (till 2021)	 Energy Management	_____	_____	<ul style="list-style-type: none"> Saved the annual average electricity conservation rate per passenger served by 12.380% as compared with the electricity conservation benchmark value in 2021 (2.387kWh of electricity per passenger served)
	 Water Resources Management	_____	_____	<ul style="list-style-type: none"> The water consumption per passenger from HSR station services was reduced by 17.170% (0.013 cubic meters of water consumption per passenger served) as compared with the benchmark value of water conservation in 2021
Medium-Term (till 2023)	 Energy Management	<ul style="list-style-type: none"> Promote energy conservation and carbon reduction measures at stations and maintenance depots, and set the annual electricity saving rate at greater than 0.86% as our energy conservation target using the average electricity consumption per passenger served at stations [excluding public areas with Taiwan Railways Administration (TRA)] and depots as an indicator 	<ul style="list-style-type: none"> Continue to promote the four major energy conservation solutions, including “autonomous energy conservation management, reduce electricity consumption, transfer peak electricity usage, and use electricity reasonably” 	
	 Water Resources Management	<ul style="list-style-type: none"> Strengthen water conservation measures at stations and maintenance depots, and set the annual water saving rate at greater than 3.42% as our water conservation target using the average water consumption per passenger as an indicator 	<ul style="list-style-type: none"> Implement water management policies of conserving water, reducing the use of water, as well as recycling and reusing water 	
	 Greenhouse Gas Management	<ul style="list-style-type: none"> Set the annual carbon reduction rate at greater than 1.5% as our carbon reduction target using the gram of CO₂e per passenger-kilometer as an indicator 	<ul style="list-style-type: none"> Implement energy conservation measures, continue to increase passenger volume, and reduce the amount of carbon emission per passenger-kilometer 	
	 Environmental Management	<ul style="list-style-type: none"> Implement the environmental management system and pass the ISO 14001 certification process again Conduct environmental education and training for employees 	<ul style="list-style-type: none"> Continue to formulate and implement management goals, check the results, and make improvements through the environmental management system Conduct environmental education and training to enhance general employees' sense of responsibility toward environmental protection and deepen the concept of sustainable development of the environment 	
	 Waste Management	<ul style="list-style-type: none"> Strengthen waste reduction, implement waste sorting, and actively recycle resources and waste 	<ul style="list-style-type: none"> Continue to create awareness of the concept of circular supply and resource recycling, promote waste reduction at the source, and strengthen waste sorting and recycling 	
Long-Term (till 2026)	 Greenhouse Gas Management	<ul style="list-style-type: none"> Conduct company-wide greenhouse gas inventory audit and verification 	<ul style="list-style-type: none"> Establish THSRC's “Greenhouse Gas Inventory Audit List” to conduct total emission inventory audit and verification and establish emission reduction measures and priorities 	
	 Energy Management	<ul style="list-style-type: none"> Implement ISO 50001 energy management system verification 	<ul style="list-style-type: none"> Establish the ISO 50001 Energy Management Systems to enhance energy management 	
	 Waste Management	<ul style="list-style-type: none"> Strengthen waste reduction, implement waste sorting, and actively recycle resources and waste 	<ul style="list-style-type: none"> Continue to create awareness of the concept of circular supply and resource recycling, promote waste reduction at the source, and strengthen waste sorting and recycling 	



Climate Change Mitigation and Adaptation

In response to international industry trends and the continued focus of domestic competent authorities on corporate responses to climate risk issues, THSRC recognizes that climate change may create a significant impact on and challenge to operational safety, so it has taken the initiative to introduce various climate change mitigation and adaptation measures. These include ongoing participation in the Climate Tracking Project^(Note) on the Climate Action Logging Platform of the “Non-State Actor Zone for Climate Action (NAZCA)” under the United Nations Framework Convention on Climate Change through the International Union of Railways (UIC), exchanging and sharing adaptation strategies in response to climate change. In addition, in 2021, THSRC conducted inventories of climate change response measures in accordance with the spirit of the Task Force on Climate-Related Financial Disclosures (TCFD). In 2022 and into the future, it will accelerate the implementation of response mechanisms and include the TCFD’s recommendations, which comprise four pillars and 11 disclosure recommendations, comprehensively evaluating climate-related risks and opportunities. Management will formulate climate governance policies together, establish carbon reduction goals and pathways, and conduct current discrepancy analysis in order to continue strengthening climate change risk management, systematically reducing the potential impact of climate change on THSR.

Note: Jointly committed to reducing carbon emissions by 50% in 2030 and 75% in 2050 based on 1990 carbon emissions levels.

Risk Management of Task Force on Climate-Related Financial Disclosures (TCFD)

Aspects	Disclosures	THSRC’s Current Practice
 Governance	Governance mechanisms for climate risks and opportunities	THSRC has established a “Risk Management Policy,” which brings together committees at all levels to establish a risk management structure covering the entire company’s operations. There is an Environmental Management Committee under the structure, which is responsible for supervising the implementation and regularly reviewing environmental risks and objectives, and communicating environmental management business. THSRC’s President serves as the chairman of the committee, and the executives of each department or division serve as members, so as to implement inter-departmental communication that is beneficial to the overall operation. A working group spanning multiple departments or divisions is set up under the Environmental Management Committee, to be responsible for the implementation of environmental management-related business. In addition, in accordance with the risk management framework, the relevant responsible management units report to the Board of Directors once a year, so as to respond to risks related to climate change and review the effectiveness.
 Strategy	Actual and potential impacts of climate risks and opportunities on THSRC, as well as their impact on the operations, strategies, and financial planning of THSRC	Risks related to climate change include increased frequency and tension of extreme weather phenomena such as high temperatures, sea level rise, rainfall volume and intensity, typhoons, and even lightning. Extreme weather may not only impact the maintenance of railway facilities and affect operating costs, but also impact train operations, thereby affecting revenue. In order to prevent and respond to the risks caused by climate change, THSRC cooperates with government agencies and power companies to strengthen climate adaptability, reduce the probability of operation interruption and possible losses, and achieve the effect of power saving and carbon reduction through the use of renewable energy, so as to reduce the impact and burden on the environment.
 Risk Management	How THSRC identifies, assesses and manages the risks of climate change	THSRC identifies and estimates the risks of climate change that may arise in the future under a risk management framework covering the entire operation of the Company, and formulates relevant risk management actions. THSRC has established a “Disaster Warning System (DWS)” to keep abreast of the status of environmental disasters. Regular disaster prevention audits and random large drills are also carried out every year to cultivate disaster response capabilities in advance. In 2021, the construction of a rainstorm early warning system was completed to provide early warning information for transportation safety risks that may be caused by extreme rainfall incidents. For relevant climate risk response measures, please refer to the table “Current and Future Potential Risks, Opportunities and Response Measures of Climate Change for THSRC.”

Aspects	Disclosures	THSRC’s Current Practice
 Indicators and Targets	Management targets and indicators of THSRC in terms of climate risks and opportunities	THSRC adopts various environmental management plans and programs to mitigate and adapt to the impact that may be caused by climate change risks, and has set the following climate-related management targets: 1. Energy use: Set the annual electricity saving rate at greater than 0.86% as our energy conservation target using the average annual electricity saving rate per passenger served at stations [excluding public areas with Taiwan Railways Administration (TRA)] and depots as an indicator 2. Greenhouse gas: Set the annual carbon reduction rate at greater than 1.5% as our carbon reduction target using the annual average carbon reduction rate per passenger-kilometer as an indicator 3. Water resources: Set the annual water-saving rate at greater than 3.42% as our water conservation target using the annual average water saving rate per passenger served as an indicator 4. Waste: Continue to create awareness of the concept of circular supply and resource recycling, promote waste reduction at the source, and strengthen waste sorting and recycling, and increase the rate of waste reuse year by year For the relevant target achievements and other environmental-related performance in 2021, please refer to the subsection in this section “Low-carbon Train Operation and Environmental Sustainability.” 

Current and Future Potential Risks, Opportunities and Response Measures of Climate Change for THSRC





Climate Risk	Potential Financial Impact	2021 Response Action
1. Extreme Heat 2. Increased Rainfall and Rainfall Intensity 3. Typhoon, Cyclone, Lightning	1. The occurrence of severe weather phenomena increases the damage to and impact on railway facilities, and increase maintenance costs 2. The occurrence of extreme weather incidents impact train operations, affecting operations and reducing revenue 3. Unstable rainfall causes unstable water and electricity supply, affecting operating costs and revenue 4. Rising temperature increases electricity consumption, increasing operating costs and carbon emissions	1. In 2021, we completed the construction of the rainstorm early warning system, and provided the warning value and action value of slope collapse for reference in the event of rainfall. The system is currently in operation ^(Note) 2. In 2021, we completed the preventive maintenance project of the slopes at the north and south entrances of Baoshan Yijia Tunnel, and strengthened the protection project of the slopes at the tunnel entrance 3. In 2021, we completed the detailed design of the post-flood scour protection for four river bridges, including Beigang River, Pizitou, Puzi River and Tsengwen River, and improved the scour risk assessment and protection design of high-speed railway river bridges 4. Plan to build rental solar power generation systems in the parking lots of Miaoli, Changhua, and Yunlin Stations
Climate Opportunity	Potential Financial Impact	Note: The section of the main HSR line from Taipei to Changhua is divided into 389 units of slopes. Per the severity of the impact on operational safety, it is divided into four levels: A, B, C, and D (level A with the highest risk while level D the lowest one). THSRC conducts slope inspections from November to April each year to facilitate follow-up improvements if necessary. Per the result of the risk assessment in May 2021, there were 1 level A slope, 2 level B slopes, 50 level C slopes, and 336 level D slopes.
1. Signed the “Memorandum of Cooperation on Cross-border Disaster Prevention” with the Central Weather Bureau, Ministry of Transportation and Communications to strengthen the meteorological interpretation capabilities 2. Install rental solar power generation systems at maintenance depots and stations in collaboration with power companies 3. Evaluate to set up a solar power generation system for generation of power for own use in the space of the station or maintenance depot, and apply for a renewable energy certificate	1. Enhance climate resilience and reduce the chance of operational disruption and possible losses 2. Energy Saving and Carbon Reduction for Saving Costs 3. Increase the use of renewable energy	



THSRC actively collaborates with government agencies to improve the completeness and efficiency of both parties' implementation of climate change-related measures in addition to strengthening internal climate risk response capabilities. The relevant collaboration methods and description are as follows:

- Since the "Memorandum of Cooperation on Cross-border Disaster Prevention" was signed with the Central Weather Bureau, Ministry of Transportation and Communications (MOTC) in 2016, both parties have continued to exchange meteorological, seismic, and geological data to improve the meteorological interpretation capabilities, and such data has served as the important reference for operational decisions during normal days and disasters and assessment of rail safety.
- We also actively cooperate with the "Adaptation Strategy to Climate Change in Taiwan" and continue to assist the Institute of Transportation, MOTC, in conducting research related to climate change adaptation, and strengthen the vulnerability and risk analytical functions of the railway and highway climate change adaptation information platform. THSRC's climate change adaptation action plan was included in the "National Climate Change Adaptation Action Plan (2018–2022)" by the Environmental Protection Administration of the Executive Yuan in 2019. In 2020, we assisted in the rolling update of the transportation system adaptation strategy through interviews. In 2021, we continued to update the implementation results of the Company's climate change adaptation measures (2018–2022).
- THSRC set climate change scenarios and analyzed the recurrence period for climate change with different frequencies based on the "Research of Climate Change Adaptation Action Plan of Railway and Highway Systems" conducted by the Institute of Transportation, MOTC, and "Taiwan Climate Change Projection and Information Platform" executed by the National Science and Technology Center for Disaster Reduction (NCDR) to develop a climate risk map and to examine climate adaptation gaps.
- We also referred to the relevant climate change adaptation research conducted by the Institute of Transportation, MOTC, and identified the hotspots with high vulnerability in the THSRC system, and applied the existing monitoring and management mechanisms to continuously monitor, manage, and optimize the mechanism to keep abreast of the potential impact of climate change and respond accordingly.

Energy Conservation and Carbon Reduction for Energy Management

THSRC has established an "Energy Conservation Project Team" to systematically manage energy use efficiency and promote energy conservation measures HSR stations and maintenance depots. The team convenes "Energy Conservation Meetings" every quarter regularly to track the implementation of such measures and review the quarterly electricity consumption. The important performance of THSRC in 2021 in energy, water resources, and greenhouse gas management is shown in the table below. Due to the impact of COVID-19, the THSRC's traffic intensity decreased during the year, and the number of trips and passenger-kilometers also decreased by 24.07% and 23.64% as compared with those in 2020, resulting in an increase in various environmental management data. However, we were still committed to fulfilling our environmental commitments through various energy conservation and carbon reduction measures. The relevant measures will be described separately in the subchapters below.

	Goal	Performance item	2019	2020	2021
 Energy Management (Note 1)	Annual average electricity saving rate per passenger served (Note 2)  >0.86%	Total electricity consumption (tens MWh)	9,890.733	9,616.699	9,089.537
		Average electricity consumption per passenger served (kWh)	1.467	1.680	2.091
		Electricity savings (MJ)	2,860.740	9,865.251	18,977.791
		Electricity saving rate (%)	5.901%	8.938%	12.380%
 Water Resources Management (Note 1)	Annual average water saving rate per passenger served (Note 3)  >3.42%	Total water consumption (cubic meter)	718,890	682,713	590,363
		Average water consumption per passenger served (cubic meter)	0.011	0.012	0.014
		Water saving rate (%)	2.727%	5.338%	17.170%

	Goal	Performance item	2019	2020	2021
 Greenhouse Gas Management (Note 1)	Annual average carbon reduction rate per passenger-kilometer (Note 4)  >1.50%	Total emissions (metric tons of CO ₂ e) (Notes 5, 6 and 7)	319,844.04	308,351.92	281,696.73
		Average carbon dioxide emissions per passenger-kilometer (gram of CO ₂ e/passenger-kilometer)	26.666	31.109	37.218
		Carbon reduction rate (%)	6.225%	11.181%	19.406%

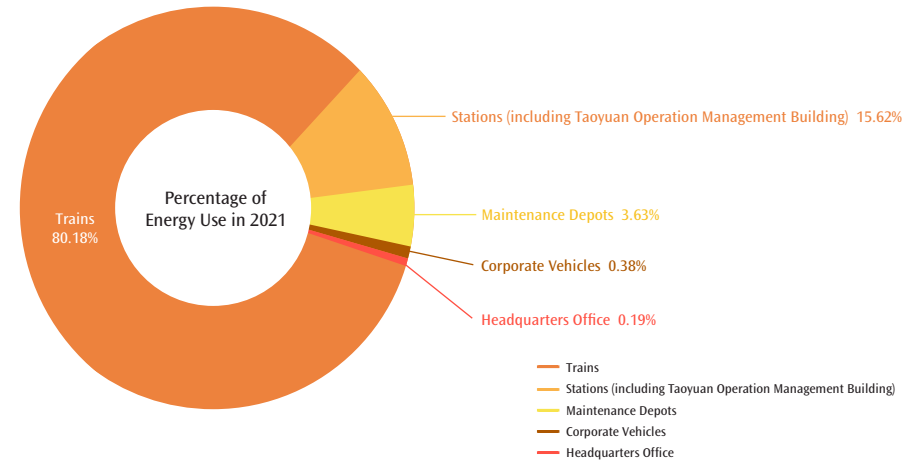
Notes: 1. The calculations of the electricity saving rate, water saving rate and carbon reduction rate in 2019 are conducted based on the previous year. However, due to the impact of COVID-19 on the passenger traffic in 2020–2021, the base value was adjusted after approval. Thus, the performance in 2020 was compared with the adjusted electricity saving standard value (1.845 kWh of electricity per passenger served), water saving standard value (0.013 cubic meters of water consumption per passenger served), and carbon reduction standard value (35.15 g of CO₂e per passenger-kilometer). In 2021, the performance was compared with the adjusted electricity saving standard value (2.387 kWh of electricity per passenger served), water saving standard value (0.0164 cubic meters of water consumption per passenger served) and carbon reduction standard value (46.18 g of CO₂e per passenger-kilometer). As for the electricity saving rate, water saving rate, and carbon reduction rate, the "positive" value represents a decrease while the "negative" value represents an increase.

- The scope of indicator and target setting covers electricity consumption at HSR stations [including Taoyuan Operation Management Center (OMC) Building but excluding commercial areas/parking lots and electricity consumption in public areas shared with Taiwan Railways Administration (TRA) (at Nangang, Taipei, and Banqiao stations)] and depots. For performances related to THSR trains and THSRC's headquarters, please refer to the subchapter titled "Building Low-carbon Trains" and "Optimization of Sustainable Operations."
- The scope of indicator and target setting covers water consumption at HSR stations [including Taoyuan OMC Building but excluding commercial areas/parking lots and water consumption in public areas shared with TRA (at Nangang, Taipei, and Banqiao stations)] and depots.
- The scope of indicator and target setting covers electricity consumption and gasoline/diesel fuel consumption in THSR trains, as well as at HSR stations [including electricity consumption in public areas shared with TRA (at Nangang, Taipei, and Banqiao stations) and Taoyuan OMC Building but excluding commercial areas/parking lots], depots, and THSRC's headquarters office.
- As the calculation of gasoline/diesel fuel consumption in 2020 was updated in 2021, the data was different from that in THSRC's 2020 Sustainability Report.
- As the calculation of the National Electric Power Emission Factor in 2021 was based on the data in 2020, the data was different from that in THSRC's 2020 Sustainability Report.
- Emission factors for gasoline and diesel fuel were corresponding factors from Version 6.0.4 (June 2019) of the Greenhouse Gas Emission Factor Management Table published by the Environmental Protection Administration.

Total Energy Consumption (Note 1)

Unit: GJ		Trains	2019	2020	2021
Stations <small>(Including Taoyuan Operation Management Center and the Public Area of the Shared Station with Taiwan Railway)</small>	Trains	⚡ Electric power	1,827,845.50	1,799,343.36	1,625,775.28
	Maintenance Depots	⚡ Electric power	70,960.14	72,400.23	66,910.38
		(Note 3) ⚡ Green power	0	0	0
		🛢 Diesel	6,168.91	6,178.07	6,736.96
	Stations	⚡ Electric power	351,037.77	327,742.62	315,763.71
		⚡ Green power	677.16	729.65	784.45
		🛢 Diesel	155.31	196.54	175.18
		⚡ Electric power	4,322.79	4,013.86	3,857.01
	Headquarters Office	(Note 3) ⚡ Green power	0	0	0
		🛢 Diesel	8,510.87	6,806.47	2,658.01
	Corporate Vehicles	🛢 Diesel	506.92	(Note 2) 1,509.11	(Note 2) 5,027.75
		🛢 Diesel	8,510.87	6,806.47	2,658.01
	Total Amount	🛢 Diesel	6,831.13	7,883.73	11,939.89
		⚡ Electric power	2,254,166.20	2,203,500.07	2,012,306.38
		⚡ Green power	677.16	729.65	784.45
		Total energy	2,270,185.37	2,218,919.91	2,027,688.73

Notes: 1. THSRC used the Energy Product Unit Heating Value Table as specified in the 2016 Energy Statistics Handbook published by the Bureau of Energy, the heating value of 1 liter of diesel fuel for motor vehicles is 7,800 Kcal/L, and the heating value of diesel fuel is 8,400 Kcal/L, which is 4.187KJ per Kcal; 1 kWh= 0.0036GJ.
2. Due to the expiration of the company vehicle leasing contract in 2020, the Company switched to another leasing agency for diesel-engined company vehicles since 2020, resulting in an increase in diesel fuel consumption in 2021.
3. Solar power generation facilities at four maintenance depots of Wuri, Yanchao, Zuoying, and Liujia were installed on the rooftop area of these maintenance depots rented by operators in the electric power industry. Electric power generated by such equipment was sold to Taiwan Power Company, so there was no data of green power consumption. As there is no renewable energy equipment installed at the headquarters office, there was no data of green power consumption, either.



Greenhouse Gas Emissions

Unit: metric tons CO₂e

Year	2019	2020	2021
Scope 1	1,129.98	1,086.07	1,091.79
Scope 1 (Biological sources)	0	0	0
Scope 2	318,714.05	307,265.84	280,604.95
Estimated Total Amount of Emissions	319,844.04	308,351.92	281,696.73

Notes: 1. THSRC used the 2019~2020 National Electric Power Emission Factor published by the Bureau of Energy and calculated emissions in 2021 using emission factors in 2020. As the calculation of electric power emission in 2020 was updated in 2021, so the data was different from that in THSRC's 2019 and 2020 Sustainability Reports.
2. Emission factors for gasoline and diesel fuel were corresponding factors from Version 6.0.4 (June 2019) of the Greenhouse Gas Emission Factor Management Table published by the Environmental Protection Administration.
3. The Global Warming Potential (GWP) was taken from the fourth assessment report of the Intergovernmental Panel on Climate Change.
4. Greenhouse gas emissions were compiled using the operational control method.
5. The types of greenhouse gases emitted included sulfur dioxide, methane, nitrous oxide, fluorocarbon, perfluorocarbons, and sulfur hexafluoride.
6. The greenhouse gas emissions in 2021 have not been verified by ISO 16064 and are expected to be completed in December 2022.

Building Low-Carbon Trains

THSRC continues to provide environmentally friendly and fast and convenient transportation services, and makes good use of the industrial advantages of low-carbon transportation to effectively mitigate the impact on the environment. The average electricity consumption per passenger served at HSR stations had been reduced from 2.25 kWh in 2008 to 1.17 kWh in 2021, and the average electricity consumption per passenger served at the maintenance depots had been reduced from 0.73 kWh in 2008 to 0.29 kWh in 2019. In 2020 and 2021, due to the impact of COVID-19, the number of passengers decreased by 15.09% and 35.53% as compared to that in 2019. As a result, the electricity consumption per passenger at the HSR stations increased to 1.33 and 1.66 kWh, and to 0.35 and 0.43 kWh at the maintenance depots.



If calculated in terms of the passenger-kilometer carried by THSRC in 2021, THSRC significantly reduced CO₂e by 628,209 metric tons compared to the smaller passenger cars, which is equivalent to the carbon uptake of 1,615 Da-An Forest Parks.

External Affirmation

Obtained “Carbon Footprint of High Speed Rail Transportation Service” and “Carbon Footprint of Inter-station Passenger Transportation certificates.”

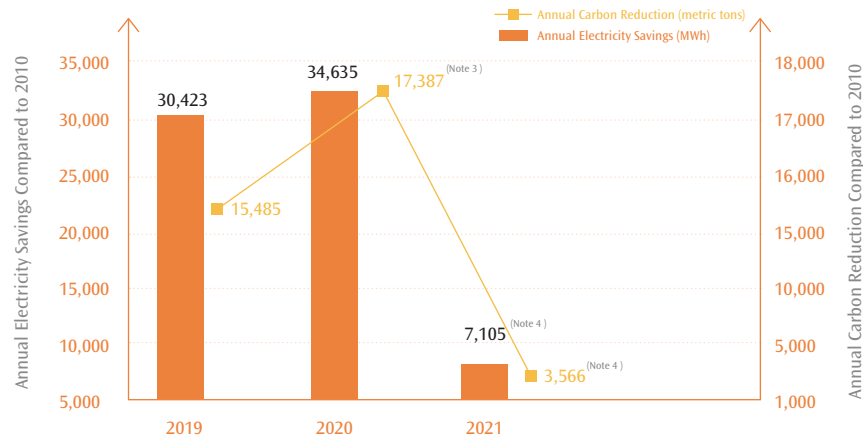
In 2021, we applied to the Environmental Protection Administration (EPA) for an extension and were awarded a renewed carbon footprint label (Valid until December 16, 2025). As we have achieved our carbon reduction commitment of reduction by more than 3% within three years (by 4.92% in practice), we were awarded a “carbon reduction label.”

In 2021, we won the “Low Carbon Product Award” from the Environmental Protection Department and were awarded a merit award and NT\$100,000 in incentive money.



In order to continuously improve the energy use efficiency of trains, THSRC has introduced the LED device replacement plan and the energy-saving train operation plan. The former one has been promoted from November 2013 to the end of 2021, saving 11,793 MWh of electricity cumulatively and reducing CO₂e by 6,146 metric tons. The latter one continues to promote energy-saving plans through the “Train Energy Conservation Team,” which has been promoted from 2010 to 2021, reducing approximately 292,654 MWh of electricity and CO₂e by 153,856 metric tons.

Energy-Saving Train Operation Performance

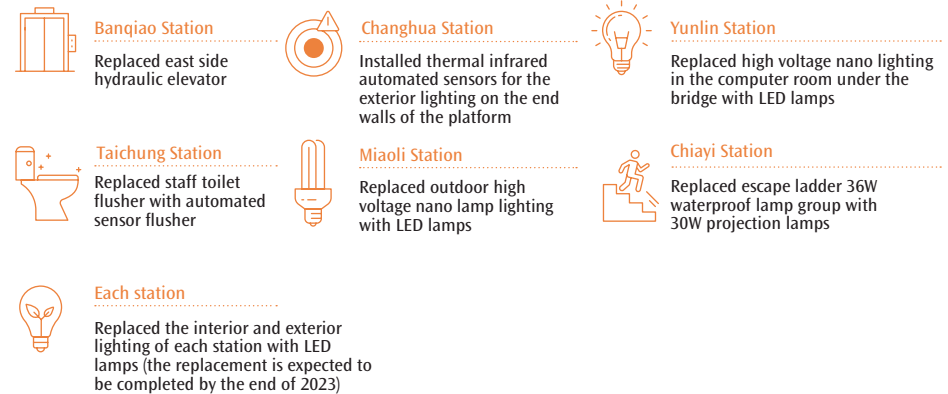


- Notes: 1. THSRC used the 2019~2020 National Electric Power Emission Factor published by the Bureau of Energy and calculated emissions in 2021 using emission factors in 2020.
2. Only electricity consumption in train operation was included. Electricity consumption for lighting and air-conditioners on trains was not included.
3. The original annual carbon savings in 2020 as compared to those in 2010 were 17,629 metric tons, which was corrected to 17,387 metric tons in the recalculation due to the adjustment of the 2020 emission factors.
4. In 2021, due to COVID-19, trains were reduced from May to November. In addition, due to the landslide incident on the Miaoli section in August, the speed limit of trains was implemented, resulting in a decrease in the energy-saving benefits of train driving in that year.

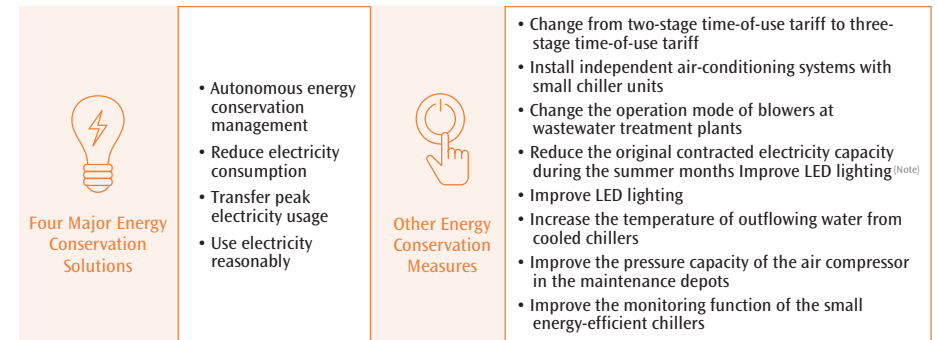
Promoting Green Stations

THSRC not only operates trains, but also promotes energy-saving projects at maintenance depots and stations, and builds a complete energy efficiency improvement plan. THSRC's stations are designed based on the concept of sustainable environment, encompassing “ecology, energy saving, waste reduction, and health.” Based on the main structure of each station, a number of energy conservation measures are implemented according to the local environment to reduce the building materials and air conditioning load. We focus on the plan to reduce energy use for the maintenance depots and continue to introduce the four major energy conservation solutions, and implement a number of improvement measures for existing equipment.

Energy Management Measures Implemented at Each Station in 2021



Energy Conservation Measures at Maintenance Depots in 2021



Note: This is a “planned electricity consumption reduction measure” during the summer months (June to September), which means that Taipower provides tariff incentives, and the Company evaluates its own operating nature and applies for a contract for measures to reduce electricity consumption. During periods of high load on the power system or power supply difficulties, Taipower can guide users to reduce or suspend part of the electricity consumption to improve the system load.

In response to the global trend of sustainable energy transition and in line with the renewable energy policy promoted by the government, THSRC has built solar power generation facilities at maintenance depots and stations. In 2021, the annual solar power generation reached 11,657.015 MWh. The total power generation of the four maintenance depots was 9,157.52 MWh, and the power generated was all sold to Taipower; the total power generation of the six HSR stations was 2,499.50 MWh, of which 217.904 MWh was used by the HSR station, and the rest was sold to Taipower.

Solar Power Generation at Four THSR Maintenance Depots

Maintenance Depots	Installed Capacity (Watt)	Annual Power Generation (MWh)		
		2019	2020	2021
(Note 1) Wuri Maintenance Depot	1,436.25	1,408.12	2,013.19	1,864.19
Yanchao Main Workshop	3,856.59	4,693.91	4,891.55	4,512.93
(Note 2) Zuoying Maintenance Depot	1,410.17	441.11	1,528.87	2,175.03
(Note 3) Liujia Maintenance Depot	499.72	—	318.80	605.35
Total amount at all four maintenance depots	7,202.73	6,543.14	8,752.41	9,157.52

Solar Power Generation at Six HSR Stations

Stations	Installed Capacity (Watt)	Annual Power Generation (MWh)		
		2019	2020	2021
Miaoli Station	72	37.83	66.56	39.81
Changhua Station	99.38	73.95	81.87	77.29
Yunlin Station	93.18	76.32	54.25	100.80
(Note 4) Tainan Station	499.72	—	676.11	622.87
(Note 4) Chiayi Station	968.44	—	1,062.66	1,027.41
(Note 5) Taoyuan Station	499.84	—	624.95	631.31
Total amount at all six stations	2,232.57	188.1	2,566.41	2,499.50

Notes: 1. Solar installation capacity and power generation of the detention ponds were added in 2020.

2. Solar installation capacity and power generation of the detention ponds and parking spaces for cars and scooters were added in 2020.

3. New solar power generation facilities were installed on the rooftop in 2020, so there was no relevant data for 2019.

4. New solar power generation facilities were installed in outdoor parking spaces for cars and scooters in 2020, so there was no relevant data for 2019.

5. New solar power generation facilities were installed on the rooftop in 2020, so there was no relevant data for 2019.

Optimization of Sustainable Operations

THSRC not only actively implements low-carbon measures related to transportation services, but also executes them in the operations with the aim of implementing energy conservation and environmental protection related actions from daily work through measures such as turning off the lights during lunch breaks, adjusting the room temperature to 26 degrees, and replacing LED lamps. The effectiveness of the energy conservation measures adopted by THSRC in 2021 are as follows:

- Since August 2019, the energy conservation measures of full replacement of LED lamps at headquarters office until 2021 saved power consumption by 231,780 (kWh) in total, what was equivalent to a reduction of around 121 metric tons of CO₂e.
- The number of electronic documents in 2021 was about 48,780, saving about 585,360 pieces of paper, conserving 70 trees and reducing 840 kg of carbon emissions.
- Since the implementation of power conservation measures in 2017 to 2021, a total of around 826,000 kWh of electricity had been saved, which was equivalent to a reduction of around 152.78 metric tons of CO₂e.

Note: Using each electronic document can reduce 12 pieces of paper with each A4 paper weighing 5 g. In 2021, switching to electronic documents saved about 2.93 metric tons of paper. According to the information provided by the Environmental Quality Protection Foundation, using 1 metric ton of paper is equivalent to cutting down 24 trees with a height of 12 m and a diameter of 15 to 20 cm, while one tree absorbs approximately 12 kg of CO₂e a year.

THSRC also adopts diverse ticketing services to reduce the impact of THSRC services provided to passengers on the environment. The relevant performance in 2021 is as follows:

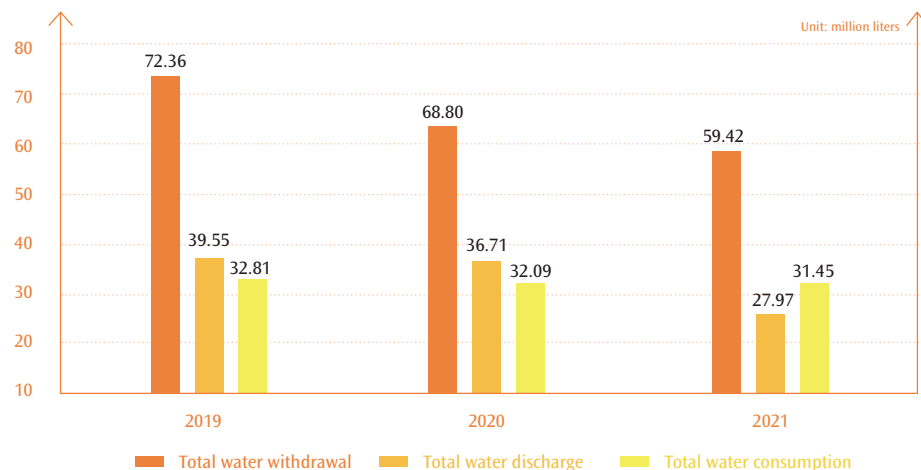
- The cumulative number of magnetic or paper tickets used by passengers has been reduced by 40.60 million pieces through THSRC's efforts to issue periodic/multi-ride tickets. In 2021, the number of magnetic or paper tickets used by passengers was reduced by 2.92 million.
- The cumulative number of magnetic or paper tickets used by passengers has been reduced by more than 57.17 million due to the use of mobile tickets. In 2021, a total of 12.73 million magnetic or paper tickets used by passengers were reduced.
- The cumulative number of passengers using co-branded credit cards for non-reserved seat service has exceeded 11.77 million people. In 2021, a total of 720,000 magnetic or paper tickets used by passengers were reduced.

Use of Water Resources and Wastewater Treatment

In order to effectively manage the Company's issues about the use of water resources, THSRC has set up the "Energy Conservation Project Team" which convenes review meetings every quarter to review the progress. THSRC actively implements comprehensive water resource management measures by implementing the three strategies of "conserving water, reducing the use of water, and recycling and reusing water." Due to the impact of COVID-19 on the passenger traffic of THSRC from 2020 to 2021, the annual benchmark value of the water-saving rate was adjusted upon approval of the Chairman. Thus, the water-saving rate in 2021 reached 17.17%, which was significantly higher than the water-saving rate in 2020 which was 5.34%. We continue to meet the water resource reduction target.

In 2021, THSRC used the water resources management tool of the World Resources Institute (WRI) for risk assessment. THSRC's water intake source is in the fifth range of 2.6-3.0 in a medium-to-low stress region. THSRC stations, maintenance depots, and THSRC's headquarters use tap water as the source of water rather than groundwater. In response to the drought and water shortage in Taiwan in 2021, THSRC not only strengthens water conservation promotion for employees and passenger, but also reduces water consumption by regulating the water output of faucets and planting sprinkler irrigation. In the future, THSRC will continue to pay attention to changes in water conditions and adjust water resources management measures.

Regarding wastewater management, THSRC has set up wastewater treatment plants at various maintenance depots and Taoyuan, Hsinchu, Miaoli, Taichung, Changhua, Yunlin, Chiayi, and Tainan Stations. Professionals with wastewater treatment licenses will classify and treat the sewage to meet the standards for effluents. The remaining stations directly discharge sewage into sewers with sewage treatment fees paid regularly. In addition to environmental management audits performed, THSRC complies with the "Water Pollution Prevention and Control Measures Plan," and the requirements of environmental laws and regulations. The total water discharge in 2021 was 27.97 million liters, and a report was filed on the quality and quantity of effluents from the sewage treatment plants as scheduled.



Note: The effluent standard complies with the effluent standard limit of the “specially polluted sewer system in other designated areas or places” specified under the Water Pollution Control Act, which includes water temperature < 35 °C (October to April) < 38 °C (May to September), pH value between 6.0 and 9.0, oil and fat <10 mg/L, suspended solids <30 mg/L, chemical oxygen demand <100 mg/L, biochemical oxygen demand <30 mg/L, ammonia and Escherichia coli).

Waste Disposal

The recycling of THSRC’s waste, including the resources generated from train maintenance operations and transportation services, as well as the recycling, clean-up, and disposal of general industrial waste and waste at all HSR maintenance depots and stations are all processed by qualified licensed operators. Non-recyclable general industrial waste is ultimately disposed in incinerators. THSRC also manages the contractors through a contract mechanism to facilitate supervision of their compliance with relevant waste regulations. In 2021, the total amount of waste treated as per the reports filed was 5,947.35 metric tons, and 1,613.104 metric tons of waste was recycled, with a recycling rate of approximately 27.1%. In 2021, no breach of contract occurred, and no leakage of oil, fuel, chemical substances, or waste occurred.

THSRC is committed to reducing the amount of waste and increasing the rate of waste recycling year by year. THSRC not only urges the implementation of internal waste management, but also actively urges suppliers to take relevant actions. In our contracts with contractors, we require them to properly clean and dispose of the waste generated. In addition to the awareness-increasing session in meetings on interface agreements and work meetings with contractors, we supervise each contractor’s implementation of waste treatment measures through on-site audits.

In 2021, THSRC invested a total of NT\$180 million in wastewater and waste treatment. The main treatment items included improvement of sewage treatment plants in Taoyuan and Taichung Stations, maintenance and upgrade of equipment of wastewater treatment plants, coagulants, precipitants and disinfectants, water quality inspection, commissioning of sludge collection and disposal, and outsourcing of waste collection and disposal. THSRC has also added grease traps in Taoyuan, Hsinchu, Taichung and Tainan to effectively separate the oil and water of the waste oil and sewage generated by the station merchants from operation, effectively reducing the impact on the environment.

Waste Disposal at HSR Stations and Maintenance Depots

unit: metric tons

	Stations		Maintenance Depots		Stations and Maintenance Depots		
	Amount of Waste	Amount of Resources Recycled	Amount of Waste	Amount of Resources Recycled	Amount of Resources and Waste Recycled	Total Amount of Waste	Resource and Waste Recycling Rate
2019	5,596.35	728.65	393.69	517.23	1,245.88	7,235.92	17.2%
2020	4,735.55	3,162.20 ^(Note)	551.59	872.58	4,034.78	9,321.92	43.3% ^(Note)
2021	3,891.98	495.29	442.27	117.82	1,613.10	5,947.35	27.1%

Note: In 2020, old air conditioners were replaced with more energy-efficient ones at the stations. Due to the large tonnage of old air conditioners, the weight of resources recycled increased, thereby increasing the recycling rate of resources and waste.

Total Weight of Hazardous and Non-Hazardous Waste

unit: metric tons

Environmental Indicator		2019	2020	2021
Total amount of general industrial waste ^(Note 1)		7,235.92	9,302.64	5,947.35
Total amount of general industrial waste recycled		1,245.88	4,034.78	1,613.10
Type and amount of waste recycled and disposed (qualified service providers were commissioned)	Waste paper	516.05	490.05	389.64
	Waste plastic	191.99	147.96	108.64
	Scrap metal	376.04	699.88	944.12
	Others (including scrap copper, scrap aluminum, waste lighting sources, waste lead storage batteries, and waste glass containers)	161.80	2,696.89	170.71
Total amount of general industrial waste incinerated		5,990.04	5,267.86	4,334.24
Type and amount of waste incinerated (qualified service providers were commissioned)	Domestic waste	4,341.54	3,867.21	3,104.97
	Liquid manure	1,535.72	1,236.29	1,012.10
	Waste wood	79.41	105.31	92.27
	Others (including waste lubricants, waste paint, and inorganic sludge)	33.37	59.05	124.91
Total amount of hazardous industrial waste ^(Note 2)		0.00	19.28	0.2
Total amount of hazardous business waste recycled and processed		0.00	19.28	0.2

Notes: 1. The waste from the headquarters is processed by the building management unit altogether, and the waste from trains is included in that from stations or maintenance depots for processing altogether, so the relevant data has been included in this table.

2. Hazardous industrial waste is nickel-cadmium batteries.

Air Pollution Management

There is no air pollutant emission problem during the transportation of THSR trains. Air pollutants are only emitted at the Yanchao Main Workshop due to train maintenance. In this regard, the Workshop is equipped with air pollution control equipment, including pulse bag dust collectors, activated carbon adsorption equipment, as well as catalyst incineration towers and other equipment, which are used to treat dust and volatile organic compounds (VOCs) generated during the spray painting process of trains. THSRC also obtained a stationary pollution source installation permit in October 2017, and a stationary pollution source operation permit in January 2019; in addition, a report is regularly filed every quarter in accordance with the Environmental Protection Administration's (EPA) "Administrative Measures for the Reporting of Stationary Pollutant Emissions in Public and Private Places." THSRC not only continues to perform environmental monitoring and environmental protection work through the Company's environmental management system, but also conducts audits on the treatment of wastewater, waste and air quality at the Company's stations and maintenance depots through external environmental protection units. In 2021, there was no punishment or penalty imposed by the competent authority due to environmental pollution. In 2021, the total air pollution emissions from THSRC was 5.03 metric tons. Please refer to the table below for the emissions of different types of gases:

Gas Category	Emissions in 2021
Nitrogen Oxides (NOx)	No emission
Sulfur Oxides (SOx)	No emission
Persistent Organic Pollutants (POPs)	No emission
Volatile Organic Compounds (VOC)	3.71 metric tons ^(Note 1)
Hazardous Air Pollutants (HAP)	No emission
Particulate Matter (PM)	1.32 metric tons ^(Note 2)

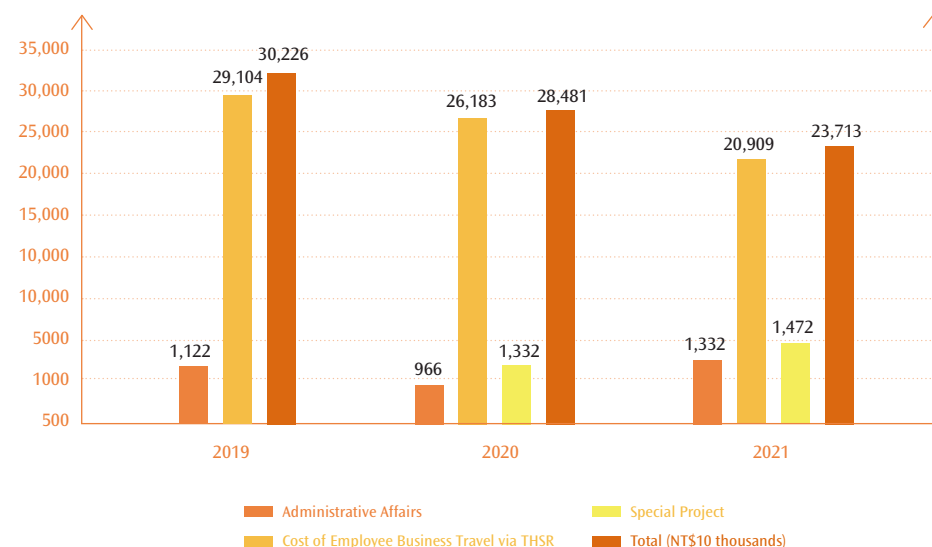
Notes: 1. Volatile organic compounds (VOC) are measured in kilograms and are calculated according to the percentage (%) of VOC substances (X), such as toluene, xylene, ethylbenzene, etc., in various spray paint materials (M), such as $M1 \times (X1Y1 + X2Y2 + X3Y3 + \dots) \% + M2(X1Y1 + X2Y2 + X3Y3 + \dots) \% + M3(X1Y1 + X2Y2 + X3Y3 + \dots) \% + \dots$

2. The data of particulate matter (PM10) in 2021 was sourced from the declared amount of the Environmental Protection Administration's "Stationary Pollution Source Air Pollution Fee and Emissions Declaration Integrated Management System," which was calculated as activity intensity x (1-control efficiency%) x emission factor.

Caring for the Environment with Green Procurement

THSRC actively implements the concept of green procurement and is committed to improving the sustainable performance of the overall supply chain. We follow the methods of the "Green Procurement Filing for Private Enterprises and Groups" announced by the Environmental Protection Administration (EPA), and have to purchase products with the eco mark and the green mark, products with the carbon footprint label, as well as products and services with the carbon reduction label as the green procurement items. As THSRC is certified with the carbon footprint label, we have also included employees' THSR travel expenses into calculation of the amount of green procurement and actively implement carbon reduction in every part of our operations. THSRC not only requires suppliers to provide products that comply with green procurement, but also incorporates the supplier's sustainability-oriented performance into the supplier selection criteria, while continuing to check whether suppliers comply with environmental regulations.

Amount of Green Procurement in Previous Years



Nurturing Talent and Value Cultivation

Inclusive and Equal Employment

In order to meet the target of sustainable operation and operational growth, THSRC has continued to introduce professionals in various fields, and adhered to the spirit of "suitable talents for suitable places" as the core concept of talent recruitment and salary design. In addition, THSRC actively enhances the diversity of employees. Our talent recruitment will be conducted equally regardless of race, skin color, religion, gender, or nationality. We also formulate employee salary, employment period, work conditions, and employment rights in compliance with relevant domestic laws and regulations (such as the Labor Standards Act, the Employment Service Act, the Act of Gender Equality in Employment). This has demonstrated our sound and diverse internal employment system. The employment and development opportunities of the disadvantaged groups are also part of our value. THSRC actively cooperates with regulations and standards, and achieves the goal of diversification of manpower through various recruitment channels. In addition, we set up a special section for the disabled on our recruitment website and hire employees with disabilities based on the characteristics of the job. In 2021, we employed 50 employees with disabilities, including eight with severe disabilities, which was higher than the number required by law, while recruiting a total of 50 indigenous people.

In 2021, the turnover rate of all THSRC employees was 2.4%, which was a sharp drop from the average turnover rate of 3.13% in the past five years. The decrease shows that our efforts to create a happy workplace have been recognized by our employees. In the future, we will continue to pursue growth in orders to attract more talents to join while continuing to incorporate diverse elements and vitality into the THSRC family.

Human Resources Structure

2021	Male	Female
Total labor force	3,074	1,594
Percentage	65.85%	34.15%
Total number of employees	4,668	

2021		Male	Female
Fixed-Term Contract	Contract Employees	7	29
	Seconded Employees	0	0
	Outsourced Employees	0	0
Total Number of Employees on Fixed-Term Contracts		7	29
Total Number of Employees on Non-Fixed Term Contract		3,067	1,565
Percentage		65.85%	34.15%
Total number of employees		3,074	1,594

Employee Category		2021		
		Male	Female	
Rank	Vice President and above	0.24%	0.04%	
	Assistant Vice President	0.32%	0.09%	
	Manager and Deputy Manager	3.42%	0.86%	
	Section Chief	11.63%	3.13%	
	General Employees	50.24%	30.03%	
Education	General and vocational high school and below	3.81%	0.34%	
	University/Junior college	52.08%	30.31%	
	Masters	9.67%	3.47%	
	PhD	0.30%	0.02%	
Other Multiple Indicators		Indigenous employees	0.86%	0.21%
		Disabled employees ^(Note 4)	0.73%	0.34%
Age	Management Level	Under 30 Years Old	0.00%	0.00%
		30-50 Years Old	2.19%	0.75%
		Over 50 Years Old	2.03%	0.21%
	Non-Management Level	Under 30 Years Old	12.19%	9.47%
		30-50 Years Old	43.29%	22.39%
		Over 50 Years Old	6.15%	1.33%

Notes: 1. Fixed-term contract employees are mostly front line interns (including station, service, and maintenance interns).

2. Non-fixed term contract employees are full-time employees.

3. The management level is defined as supervisors of section chief level and above.

4. No part-time staff was hired in 2021.

5. The calculation formula is the number of people in the particular group/Total labor force.

6. Due to the rounding of the data presented, the sum of data may not be exactly 100%.

7. The calculation of data on employees with disabilities did not include employees on unpaid leave. In 2021, THSRC employed a total of 50 employees with disabilities, which was higher than the 1% employment requirement as stipulated in the prevailing regulations.

8. For the data on the human resources structure from 2019~2020, see Tables 3 in the Appendices. [🔗](#)

Statistics of New Employees

2021		Male		Female	
		Number	Percentage	Number	Percentage
Category	Train Staff	6	0.13%	3	0.06%
	Station Staff	34	0.73%	32	0.69%
	Operation Control Personnel	0	0.00%	0	0.00%
	Train Driver	0	0.00%	0	0.00%
	Maintenance Personnel	48	1.03%	1	0.02%
	Others	21	0.45%	10	0.22%
Age	Under 30 Years Old	88	1.89%	37	0.79%
	30-50 Years Old	21	0.45%	8	0.17%
	Over 50 Years Old	0	0.00%	1	0.03%
Total		109	2.34%	46	0.99%

Note: For the data on new employees from 2019~2020, see Table 4 in the Appendices. [🔗](#)

Statistics of Resigned Employees

2021		Male		Female	
		Number	Percentage	Number	Percentage
Category	Train Staff	0	0.00%	8	0.17%
	Station Staff	6	0.13%	9	0.19%
	Operation Control Personnel	4	0.09%	0	0.00%
	Train Driver	1	0.02%	0	0.00%
	Maintenance Personnel	40	0.86%	0	0.00%
	Others	30	0.64%	14	0.30%
Age	Under 30 Years Old	26	0.56%	6	0.13%
	30-50 Years Old	36	0.77%	20	0.43%
	Over 50 Years Old	19	0.41%	5	0.11%
Total		81	1.74%	31	0.66%

Notes: 1. Only non-fixed contract employees were included in the calculation of the turnover rate while interns, dispatch manpower, and contract employees were not included.

2. The turnover rate is calculated as: Annual number of resigned employees in the current month/Total number of employees at the end of the period.

3. For the data on resigned employees from 2019~2020, see Table 5 in the Appendices. [🔗](#)

Complete and Perfect Salary and Benefit System

THSRC attaches great importance to the rights and well-being of employees, provides competitive salary and benefits, formulates a transparent and fair salary policy, and pays employees based on work experience, education and experience, and expertise, regardless of gender, race, religion, or difference in political stance, and salary adjustments are made by taking into account shareholders' rights and employee compensation standard.

The starting salary of THSRC junior employees in each job category is higher than the basic salary in Taiwan and does not differ due to gender. As most of THSRC's technical professionals are males, and their salaries are higher than other positions due to the nature of the professional services, there is a difference in the salary ratio of females to males in the general positions. In addition, there are less female supervisors at Assistant Vice President and Vice President level and above and there are changes in promotion and job, so the difference in the salary ratio of females to males is higher than that of other management levels. However, there is no significant difference, which indicates the equality of THSRC's salary policy. Besides, in order to protect secondees' and contract employees' rights, their salaries are determined and approved by THSRC, and THSRC will inspect manpower agencies' labor contracts and salary-related documents to protect such employees' labor rights.

Comparison with Basic Salaries in Taiwan

Items	Female	Male
Local basic salary (NT\$)	24,000	
Starting salary for junior staff (NT\$)	33,800	33,800
Ratio of starting salary for junior staff to local basic salary	1.41	1.41

Ratio of Basic Salaries of Females to Males^(Note)

Rank	Female	Male
Vice President and above	1	1.11
Assistant Vice President	1	1.14
Manager and Deputy Manager	1	1.02
Section Chief	1	1.01
General Employees	1	1.08

Note: THSRC calculates the ratio of basic salary of females to males based on the fixed monthly salary paid to colleagues every month.

In 2021, there were 4,660 full-time non-supervisory employees in THSRC, an increase of 86 people over the previous year. The total salary was NT\$4,186,182 thousands, the average salary was NT\$898 thousands, and the median salary was NT\$812 thousands. Compared with the previous year, the total salary decreased by NT\$85,099 thousands, the average salary decreased by NT\$36 thousands, and the median salary decreased by NT\$26 thousands.

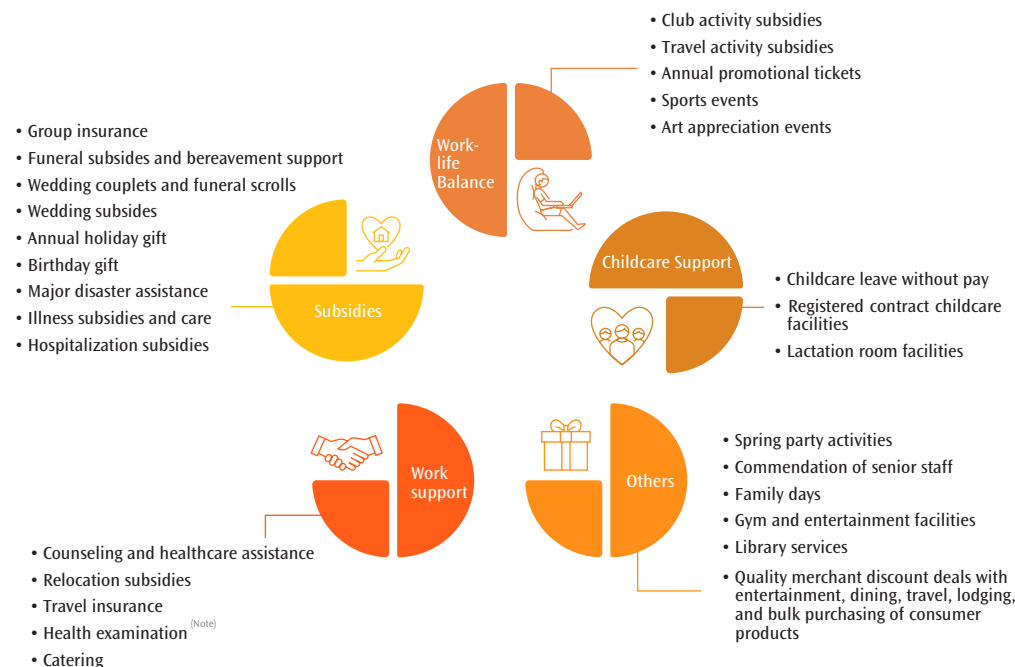
Information on Salaries of Full-Time Non-supervisory Employees

Items	Unit	2020	2021	Annual Variation
Number of full-time non-supervisory employees	Number	4,574	4,660	1.88%
Total salary of full-time non-supervisory employees	NT\$ thousands	4,271,281	4,186,182	-1.99%
Average salary of full-time non-supervisory employees	NT\$ thousands	934	898	-3.85%
Median salary of full-time non-supervisory employees	NT\$ thousands	838	812	-3.10%

THSRC not only provides a transparent and fair salary system, but also firmly believes that the establishment of a comprehensive benefit system is an important key to support employees in the Company's sustainable development. THSRC provides a variety of benefits such as childcare support, work-life balance, work support, and subsidies to help employees balance work and life at the same time. We have also established an employee welfare committee in accordance with the law. Moreover, we regularly review the existing internal welfare policy through market surveys conducted by external consulting companies to ensure that our welfare plans remain competitive in the market. We also provide statutory infectious disease insurance and vaccine insurance for our colleagues in response to COVID-19 and vaccination needs. In order to promote its employees to live and work in peace and contentment, THSRC has not only set up an unpaid parental leave system but also continues to think about how to ensure that employees' salary and career development are not restricted, so as to enable employees to "give birth and be on parental leave without worries." For employees who apply for statutory unpaid leave (including parental, injury, illness, and military service), regardless of gender, if the company implements a salary adjustment during the unpaid leave, the annual salary adjustment system can still be applied after reinstatement so as to protect their working conditions.

In addition, in response to COVID-19 in 2021, in order to reduce the risk of infection for employees, THSRC has expanded the implementation of flexible commuting hours, adopted an attendance diversion system, and introduced pandemic prevention measures to work from home in groups to fully protect the employees' health.

THSRC Employee Benefits and Work Support Items



Note: THSRC's health examination measures are superior to those stipulated in the relevant laws and regulations, where general employees aged 45 years old and above undergo health examination once a year, and those aged under 45 years old undergo health examination once every two years, while train personnel undergo health examination once a year. The 2021 annual health examination for general and train personnel was completed from March to September, and 100% of train personnel completed the health examination.




Comprehensive Employee Training

Training Based on Three Major Competencies

THSRC attaches great importance to the development of employees' competencies. In order to ensure the integration of training and practice, THSRC plans the education and training of employees based on the two main aspects of "safety" and "service," and strengthens the professional knowledge of the three major competencies, namely core competencies, professional competencies, and management competencies, so as to comprehensively improve the knowledge required by employees.

In order to stimulate employees' enthusiasm for learning and to enhance the learning of professional knowledge, we have combined multiple learning channels including external training, online digital courses, and hands-on sessions while establishing a "Training Management and Digital Learning System" and a mobile learning App to effectively monitor learning process and improve learning efficiency. In 2021, the number of employees participating in digital learning was 238,392 throughout the year, with an average monthly number of 19,866, a decrease of 21.4% as compared with that in 2020. The main reason was that during COVID-19 from May to September in 2021 where work from home measures were implemented, home computer equipment, network traffic restrictions or course design affected the number of employees participating in digital learning.

Training Based on Three Major Competencies

Type of Competencies	Key Content	Applicable Personnel	Progress	Implementation Results in 2021
 Core competencies	Related training to shape employees' values, safety, quality, and services	All employees	1. THSRC provides online courses, such as train helper, ethics and integrity education and training, confidential information protection operations, as well as information safety and management, so that employees can familiarize themselves with THSRC's spirit of integrity and respond cautiously to information security incidents to prevent illegal activities from occurring	1. 100% of employees completed the train helper training 2. 100% of employees completed the ethics and integrity training 3. 100% of employees completed the training of confidential information protection operations and information security and management
 Professional competencies	Related training to enhance job knowledge and skills required by employees	All employees	1. THSRC's front line professional technical and service personnel must pass certifications and incident simulation drills to maintain a high level of sensitivity to transportation safety at all times 2. THSR train drivers not only have to undergo at least more than 1,000 hours of professional driving courses but must also attend THSRC's internal training test to obtain driving certification after completing training, and pass the high-speed rail train driving license test of the MOTC before they can start performing their duties as a train driver	1. 99% of railway maintenance personnel obtained the professional certificate 2. 100% of employees completed the training of train personnel skill test
 Management competencies	Related training to advance management philosophy and thinking, strategic thinking, planning and organization, and leadership among supervisors	Junior, middle, and top supervisors	1. To cultivate supervisors' competencies and strengthen management efficiency and quality, THSRC has formulated various strategic thinking and leadership training courses 2. Planned a two-day "Customer-oriented Communication Influence Workshop" and "Continuous improvement & Decision making quality enhancement Workshop" for individual managers 3. We used scientific evaluation tools, and arranged 14 supervisors to conduct management ability evaluation. Based on the evaluation results, we examined the existing ability gaps and continued to arrange training courses on strengthening "communication ability" and "cognitive ability" to assist them in optimizing management effectiveness and continue to operate the "Managements Learning Passport"	1. 95% of employees completed the "Customer-oriented Communication Influence Workshop" and "Continuous improvement & Decision making quality enhancement Workshop" 2. 100% of employees completed the training for management ability evaluation

Internal Lecturer Cultivation

In order to strengthen the professional knowledge and technical strength of THSRC colleagues, while taking into account the increasing demand for professional courses on our own year by year, THSRC continues to cultivate internal lecturers in professional fields such as safety, service, and technical services, who are recommended or selected by senior colleagues or supervisors from relevant units. These candidates are qualified as internal lecturers after passing the training courses and practical exercises. In 2021, THSRC trained a total of 46 qualified internal lecturers. The categories of lectures by internal lecturers are based on professional competency training, supplemented by management competency training. In 2021, 50,315 hours of internal training were conducted, 1,454 internal lecturers participated in the teaching, and the average teaching hours per internal lecturer were 34.6 hours.



Group photo of teachers and students of the internal lecturer training course



Internal lecturer training course




Training Program

2021 Internal Lecturer Training



Satisfaction (out of 5 points)

Average Satisfaction 4.8 



Student Experience and Feedback


The lecturers are fabulous and can extend many different viewpoints and ideas, which makes us learn a lot. We can learn more about teaching skills and methods through this internal lecturer training course, and deepen the impression of the course content through interaction with students.

Results of Education and Training Programs

In order to ensure the effectiveness of education and training, THSRC has set up a course satisfaction survey mechanism, and proposed improvement plans based on the scores. In 2021, the overall employee satisfaction regardless of training category was 4.6 points (out of 5 points), showing that THSRC is committed to talent development are trusted, and such effort has been trusted and recognized by employees. In the future, THSRC will also continue to integrate internal and external resources, and continue to improve our learning ability and employees' self-growth, and cultivate employees' all-round capabilities.

In 2021, the number of training hours for THSRC employees according to different rankings and categories was as follows. This year, due to the impact of COVID-19, some annual training courses have been cancelled, resulting in fewer training hours than that in 2020:

2021	Male	Female	Total
All Employees at THSRC			
Number of Training Hours Per Capita (hours) Average ^(Note 1)	173.1	44.2 ^(Note 3)	119.0
Number of Training Hours Per Training Session (hours) ^(Note 2)	9.0	3.2	7.4
Average Number of Class Hours Per Different Job Rankings ^(Note 4)			
Vice President and above	13.4	11.6	13.1
Assistant Vice President	34.3	44.1	36.3
Manager and Deputy Manager	42.8	33.3	40.9
Section Chief	90.8	26.9	77.2
General Employees	202.9	39.4	142.0
Average Number of Class Hours Per Different Categories ^(Note 5)			
Train Staff	93.4	45.8	55.5
Station Staff	77.5	49.5	59.7
Operation Control Personnel	150.8	215.6	164.4
Train Driver	188.3	19.3	175.3
Maintenance Personnel	290.4	160.8	290.1
Others	42.6	25.4	35.9

- Notes: 1. Training hours per capita = Total training hours/Total number of trainees. The training hours per capita of males and females differ from each other mainly because of the ratio of males and females and different professional training attended due to job differences.
2. Average number of training hours per training session = Total training hours/Total number of training session. "Average number of training hours per training session" aims to present the number of training hours per training session for each person every year.
3. The calculation includes fixed-term contract and non-term contract employees. Fixed-term contract employees are mostly front line interns (including station, service, and maintenance interns), and non-term contract employees are full-time employees.
4. As most of the THSRC's female employees are mainly transportation and office colleagues, the training hours for these job categories are relatively few, and courses have been canceled due to the impact of the pandemic. As a result, the number of training hours for females in 2021 has dropped significantly as compared with that in 2020.
5. Average number of class hours per different job rankings is calculated by dividing the total number of training hours for a job ranking by the number of employees at the particular job ranking throughout the year.
6. Average number of class hours per different categories is calculated by dividing the total number of training hours in a particular category by the number of employees at the particular category throughout the year.
7. For the training hours from 2019~2020, please refer to Table 6 in the Appendices. 

Talent Management and Motivation

THSRC reviews the performance of all employees and supervisors through performance appraisal once every year, and are rated according to the appraisal results. Ratings are divided into five levels in the following order, "Outstanding," "Significantly exceed requirements," "Exceed general requirements," "Meet requirements," and "Unable to perform existing work, and require improvements," of which employees rated as "Unable to perform existing work, and require improvements" need to receive performance counseling to improve their operation, and the unit supervisor will provide necessary assistance and counseling on the reasons for the poor performance of the employees. In 2021, the number of full-time employees should accept performance evaluation was 4,666. Except for the four employees due to resignation during the evaluation period and leave for the whole year who were confirmed not to be evaluated by both the employees and their supervisors, all employees received performance evaluation. The number of people who completed the evaluation accounted for 99% of the number of employees who should be evaluated.

Percentage of employees receiving performance evaluation by gender and age in 2021

Age Range	Female	Male
Under 30 Years Old	6.8%	9.3%
30-50 Years Old	25.2%	44.7%
Over 50 Years Old	2.4%	11.6%
Total	34.4%	65.6%

THSRC's Performance Appraisal Process

Performance Guidance



After Key Performance Indicators (KPIs) are set, supervisors manage appraisees' performance on a daily basis, routinely review the progress of target achievement, provide employees with the support required to complete their jobs and feedback regarding work results, attitude, and behavior. Supervisors also assist employees in achieving their KPIs through work guidance and assistance.

Performance Interview



Employees and supervisors discuss about the achievement of work performance, and "competencies." Supervisors provide appropriate feedback, assist and counsel their subordinates to enhance/improve their performance, discuss about employees' individual development plans, and plan specific approaches.

Annual Appraisal Results



Appraisal results will be used as the basis of reference for training and development plans, job transfers, promotions, salary adjustments, bonus distribution, etc. for employees.

Promotion and Development of High-Performing Talents

THSRC has long been implementing the talent development program known as “Career Path,” and is continuously committed to building a perfect personnel development structure. THSRC designs different retention and career development paths for high-performing talents at front line units and personnel in different positions, and also plans the relevant manpower allocation based on the results of the annual manpower inventory audit, to satisfy relevant needs of each business unit. Based on the two foundations of organizational needs and personal development, we provide high-performing talents with “annual promotion” opportunities to improve employees’ professional level and achieve the goal of motivating and retaining talents. For those who are interested in taking up management positions and meet the Company’s needs and conditions, they can also expand their personal career development and give full play to their potential through the “job promotion” channel.

Starting from 2021, THSRC planned a specific career development path for maintenance and operation employees. We expected that maintenance and operation professionals will learn diversified development and improve communication skills through different job experience, so as to cultivate future maintenance and operation site supervisors and improve organizational operation efficiency. In 2021, a total of 65 maintenance and operation employees received training. In 2021, we will also conduct relevant training in accordance with the implementation principles of career development and exchange plans, aiming to strengthen employees’ cross-disciplinary professional knowledge, and cultivate a total of 28 station masters, train supervisors, and chief controllers; station supervisors and station train controllers. A total of 10 people; another train driver and controller train a total of 4 people.

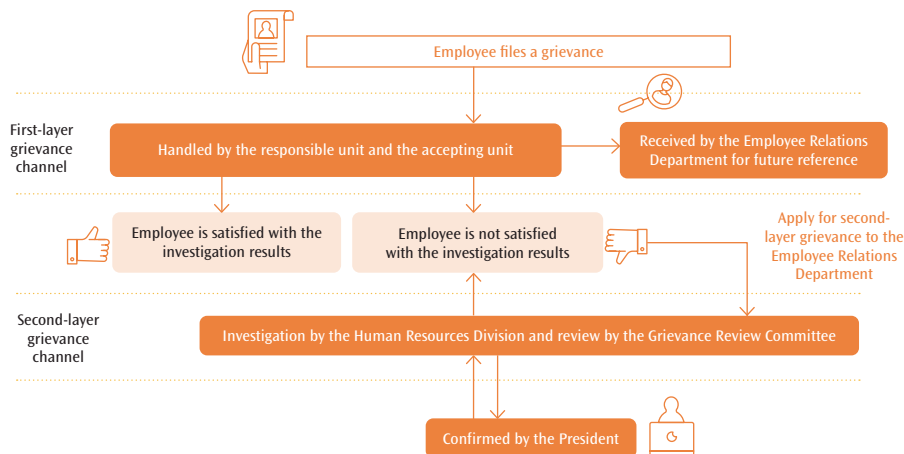
Protection of Rights and Considerate Care

Labor Relations and Employee Care

THSRC attaches great importance to the voice of every employee, and believes that good two-way communication is an indispensable and important factor for our sustainable operation. In this regard, we have established diverse grievances and communication channels. In addition to setting out employee complaint rules, we manage to learn about employees’ needs through monthly discussion meetings with the THSRC Labor Union on various issues and quarterly labor-management meetings held at 19 business premises to maintain harmonious labor-management relations. Moreover, THSRC has established sexual harassment prevention and grievances channels, and implemented relevant training courses and sexual harassment prevention awareness sessions to protect THSRC workers’ physical and mental safety to prevent the occurrence of internal and external sexual harassment incidents.

THSRC’s process of handling grievances filed by employees is shown in the figure below. In 2021, a total of four employee grievance incidents were received, which were mainly related to interpersonal and management issues. All cases were handled in accordance with the employee grievances process, and all cases have been responded to and closed. In the future, THSRC will continue to actively handle grievances from employees to maintain harmonious labor-management relations and to establish a healthy workplace with open communication.

Employee Grievances Process



In terms of employee care, THSRC has formulated corresponding internal equipment and care measures in accordance with the “Act of Gender Equality in Employment” and “Labor Health Protection Regulations,” and formulated “Mental Health Protection Regulation” to properly cater for the needs of different employees. To create a more human-friendly work environment, we introduced an external “employee support program” in 2021 to help employees respond to various types of problems, provide timely support and assistance, and maintain employees’ physical and mental health. The details are as follows:

Act of Gender Equality in Employment	THSRC has established baby caring rooms and breastfeeding rooms for employees to encourage and support breastfeeding policies.
Labor Health Protection Regulations	THSRC has established infirmaries at headquarter, Operation Management Center (OMC) building, and maintenance bases, and set up health rooms with better standards than those required by the relevant laws and regulations at HSR stations, to provide employees with emergency medical assistance.
Mental Health Protection Regulation	<ul style="list-style-type: none"> Upon the occurrence of an accident, unit supervisors, accident investigation units and human resources personnel will jointly maintain employees’ mental health protection. We work with the relevant departments to provide health consultation, work allocation suggestions, and mental consultation to employees who will go into mandatory retirement, have major injuries and illnesses, or are adapting to reinstatement to duty. In 2021, we took care of a total of 242 employees. According to the relevant government policies to protect employees’ physical and mental health and employees’ needs, we have formulated employee mental health lectures.
Employee Support Program	<ul style="list-style-type: none"> Provide service cards, posters, EDM, and publicity seminars to promote and introduce the employee support program. Provide 24-hour telephone consultation, counseling, and crisis intervention and protection plans to assist employees in resolving organizational and personal issues that may affect work performance. A total of 62 employees were consulted. Provide a physical and mental health care platform which links relevant welfare and health information to allow employees to seek suitable assistance resources based on personal needs. Provide monthly physical and mental related publicity, self-assessment of emotional stress, and other new knowledge of mental health, and plan to conduct mental health lectures based on employees’ mental health needs. In response to the impact of COVID-19 in 2021, we provided peer care services, and took care of a total of 119 employees.

We also planned special seminars and training courses according to the needs of different job positions to enhance employees' knowledge and skills, help them relieve stress, and promote a harmonious work environment. The relevant information and number of participants in the 2021 course are as follows:

Course Title	Course Content	Participants	Batch	Training Hours	Number of Participants
Secret to a Good Night's Sleep	<ul style="list-style-type: none"> Sleep Disturbance Factors Should be Combated Build Sleep Aid Skills 	All employees	1	2	90
Illegal Workplace Assault Prevention and Interpersonal Boundary and Communication	<ul style="list-style-type: none"> The Impact of Relevant Laws and Regulations on the Workplace Illegal Assault & Sexual Harassment Incident Response Interactive Strategies to Prevent Illegal Infringement Workplace Interaction and Preparation for Communication Establishment and Communication of Correct Interaction in the Workplace 	All employees	5	35	241
Effective Decompression and Physical and Mental Balance	<ul style="list-style-type: none"> Introduction and Application of Decompression Techniques Lead Decompression Activities Develop a Personal Decompression Plan 	All employees	2	4	41
"A Win-Win Choice for Parenting and Workplace: Talking about the Stress of New Parents"	<ul style="list-style-type: none"> A New Understanding of Myself: I am Such a Parent The Love and Hindrance of New Parents: a Large Amount of Information for Selection and Digestion Is the Husband and Wife a Companion or a Stumbling Block? A Love-hate Relationship on the Same Boat Win-win Situation between Workplace and Parenting? Am I Still Myself? 	All employees	1	2	14
Retirement Career Planning in the Workplace: Six Suggestions for Maintaining Vitality and Unifying the Life Course	<ul style="list-style-type: none"> Adjustment of Retirement Preparations Arrangements for Leisure and Entertainment Continuation of Lifelong Learning Planning for Retirement and Employment Arrangements for Volunteering Services Organizing Life 	All employees	3	6	110
Say No to Illegal Workplace Abuse	<ul style="list-style-type: none"> Build Workplace Boundaries Common Unreasonable Behaviors in the Workplace 	All employees	2	4	78
Total			14	53	574

Occupational Safety and Health

Management Mechanism and Effectiveness

To implement a safety culture that is people-oriented, THSRC has built an occupational safety and health system ever since its inception, and has continued to improve the performance of the management system. In 2020, we completed the verification of the transition to Taiwan Occupational Safety and Health Management System (TOSHMS) CNS 45001 and ISO 45001. In 2021, we further passed the extended certification of the "Performance Recognition of the Occupational Safety and Health Management Systems" by the Ministry of Labor. By the end of 2021, the scope of THSRC's occupational health and safety management system covered HSR stations, maintenance depots, facilities along the line, and office spaces. The number of workers covered by this system was 4,688, and the cumulative number of contractors' personnel covered was 91,572; the approval rate of internal and external audits of the system was 100%.

THSRC has also formulated the "Safety and Health Policy" and regularly convenes the "Occupational Safety and Health Committee" (consisting of one chairman, one executive secretary, and 17 committee members, where seven of them are labor representatives, accounting for one-third of all committee members) and occupational safety and health management meetings, to motivate all units and labor representatives to jointly review the THSRC's various occupational safety and health issues, and the resolutions are announced through internal and external websites.

In addition to establishing systems and policies to enhance the Company's overall occupational safety awareness, we continue to implement employee safety and health training, and select seven special hazardous operations, namely production machinery, hydraulic aerial cages, hoists, construction, hypoxia operations, electric welding, and chemical use and disposal for training, to strengthen employees' emergency response capabilities, and confirm the implementation of the contractor's safety and health training through supporting documents. A total of 677 employees completed such training sessions in 2021, with a total of 2,913 hours. The training information is detailed in the following table:

Category of Training	Training Content	Number of Employees Trained	Number of Training Hours
Initial training for maintenance personnel	Production machinery, hydraulic aerial cages, hoists, construction, hypoxia operations, electric welding, and chemical use and disposal	49	1,029
On-the-job training for maintenance personnel	Hydraulic aerial cages, construction operations, hypoxia operations and confined spaces, and chemical use and disposal	628	1,884
Total		677	2,913



Training Program

Education and Training of MH Hydraulic Aerial Cages



Satisfaction (out of 5 points)

Average Satisfaction 4.73



Student Experience and Feedback

This course is mainly aimed at reviewing the implementation of driving operations. By discussing with other driving students, they can strengthen professional knowledge, and share the experience of operating cages with other students to enhance the overall understanding.

To address occupational hazard, THSRC has established the "Hazard Identification, Risk Assessment, and Risk Control Procedure" to reduce the chance and severity of occupational disasters in advance through steps of hazard identification, inspection of existing protective facilities, risk assessment, and control measures and adopted a hierarchical control system to eliminate hazards and minimize risks. In addition, THSRC assigns the trained hazard assessment personnel at each unit to disclose the hazard assessment information of each operation on the internal platform, and to re-check the effectiveness of the hazard control measures every year to continuously mitigate and control the risk of each operation. In 2021, more than 13,552 hazard identification and risk assessments were completed.

Hazard Identification, Risk Assessment, and Risk Control Procedure



Regarding the situations that may cause occupational safety and health risks, THSRC encourages all workers to actively report and requires all units to truly report false alarms and missing occupational disasters, so as to eliminate concealment, discover the true root cause, and improve potential hazards and risks. We also ensure smooth reporting of occupational disasters and accidents through company regulations and announcements. In 2021, there were a total of 131 false alarms related to THSRC's occupational safety and health, of which "falling over" and "being cut, cuts, and abrasions" accounted for the largest proportion. After understanding the actual situation, we continue to improve work safety through environmental optimization, safety awareness enhancement, and regular maintenance of protective equipment.

If a worker discovers that there is a risk of immediate harm when performing his/her duties, the "Occupational Safety and Health Act" shall prevail in priority, and the worker can stop the operation and retreat to a safe place. The immediate supervisor who is informed will initiate subsequent measures to eliminate hazardous situations to ensure the safety of workers. In case of a disaster, after the internal and local competent authorities are informed, THSRC will immediately initiate an investigation process as per the "Occupational Disaster Notification and Investigation Process," with the aim of handling the incident effectively and alleviating the negative impact as quickly as possible. During the investigation, the immediate unit supervisor of said worker will lead the occupational accident investigation team to carry out the investigation jointly with labor representatives to ensure labor rights.

Occupational Accident Notification and Investigation Process



On-Site Notification

Request personnel in charge of job sites to report occupational accidents immediately after confirming the number of victims, the initial severity of injuries and the sequence of events in occupational accidents according to the severity of these accidents.



Send Notifications to Local Labor Inspection Agencies

Accidents involving death, at least three victims, or at least one victim who needs to be hospitalized for treatment at the workplace of THSRC have to be reported to local labor inspection agencies within eight hours after such accidents take place, and to supervisors using the occupational accident notification system.



Subsequent Investigation

- Assign suitable personnel to form an investigation team together with labor representatives and the representatives of the Occupational Safety and Health Office to conduct investigations of accidents.
- Identify the direct, indirect, and basic causes for occupational accidents.
- Draw up an occupational accident investigation report, and continue to track the implementation of relevant improvement measures set out in the report.

THSRC not only implements internal occupational safety and health management, but also actively communicates with its supplier partners to work together to create a friendly and healthy workplace. The Company introduced the Occupational Safety and Health Management System for Contractors (CSH) in 2021, and has formulated the application and review procedures for contractors to work in areas including the HSR stations or the Operation Management Center. Under the "Contract Management Plan," we also require contractors to submit an "Occupational Safety and Health Management Plan" before starting the construction in the site, with the aim of enhancing the performance of suppliers' occupational safety and health through the formulation of the above-mentioned norms.

In order to manage THSRC's occupational safety and health performance, we set quantitative and traceable indicators for measurement, and implement internal management mechanisms through periodic or non-periodic inspection and audit mechanisms. In 2021, the achievement of occupational safety and health management goals of THSRC employees and contractors/suppliers as well as the occupational safety indicators is listed in the table below:

2021 Occupational Safety and Health Management Goals ^(Note 1)

2021		Goal	Actual Data		
			Male	Female	Total
THSRC Employees	Frequency-severity indicator for occupational accidents at the workplace	0.10	0.01	0	0.01
	Frequency-severity indicator for traffic related accidents outside the workplace ^(Note 2)	0.17	0.08	0.93	1.01
Contractors/Suppliers	Number of people in fatal accidents	0	0	0	0
	Number of people in accidents involving at least three victims	0	0	0	0
	Number of people in accidents involving at least one victim who needs to be hospitalized for treatment	0	3	1	4 ^(Note 4)

Note: 1. The settlement date for occupational safety and health management targets was December 31, 2021.

2. Frequency-severity indicator = $\frac{\text{Disabling injury frequency rate FR} \times \text{Disabling injury severity rate SR}}{1,000}$.

3. In 2021, 21 traffic occupational hazards that occurred not in the workplace were reported at THSRC.

4. In 2021, a total of four contractors suffered a disaster who needed to be hospitalized for treatment, two of which were falling over, and the other two were conducting inappropriate actions, being cut, or suffered from cuts and abrasions.

In 2021, there were no deaths or serious injuries caused by employee occupational injuries in THSRC. There was one occupational injury on record. The cause of the accident was that the feet stepped on the wet and slippery ground during the operation, which caused the personnel's center of gravity to be unstable, and his head slammed back into the ground; Regarding all workers who were not employees but whose work and/or workplace was controlled by the organization, there were four occupational injuries on record. Falling over is the main category of occupational injury, which accounts for high proportion. THSRC continues to increase workers' awareness of safety and health by reminding them to pay attention to the ground conditions at all times when walking rather than being distracted while using handrails when going up and down the stairs to prevent falling over/down or bumping against people. In order to prevent the hazards of falling and rolling down, the establishment of safety protection measures (such as guardrails or protective equipment) have been comprehensively reviewed and evaluated to ensure a safe work environment.

Through the operation of the non-concealment management mechanism, all our occupational accidents have been filed as they were, and no occupational disease-related incidents occurred this year. In the future, we will continue to optimize and manage occupational safety and health-related measures to actively raise employees' safety awareness.

Occupational Safety Index

2021	Employees	Contractors
Number of deaths resulting from occupational injuries	0	0
Ratio of deaths resulting from occupational injuries	0	0
Number of severe occupational injuries ^(Note 2)	0	0
Ratio of severe occupational injuries ^(Note 3)	0	0
Number of occupational injuries on record	1	4
Ratio of occupational injuries on record ^(Note 4)	0.02	1.09
Main categories of occupational injuries	Falling over	Falling over

Notes: 1. This table is calculated in accordance with the Occupational Safety and Health Act, the definition of occupational disasters and the indicators published by the Global Reporting Initiative (GRI).

2. Ratio of deaths resulting from occupational injuries = (Number of fatal occupational injuries/Total working hours) x 200,000

3. Ratio of severe occupational injuries = (Number of severe occupational injuries/Total working hours) x 200,000. Note: 0 employees for 0 day; 0 contractors for 0 days

4. Ratio of occupational injuries on record = (Number of reported occupational accidents/Total working hours) x 200,000. Note: 1 employee for 33 days; 4 contractors for 75 days. Notes 2 and 3 have been deducted

5. Total working hours for employees were 9,412,680 hours. For contractors, the total working hours were calculated as: annual cumulative number of people entering and leaving the venue (91,572 people) * 8 hours per day = 732,576 hours

Employee Health and Safety Management Measure

In order to continuously promote the health and safety of THSRC employees, THSRC continues to implement workplace safety measures, organize health promotion lectures and courses, and strengthen relevant training for new employees to protect the health and well-being of internal partners. Relevant health promotion activities in 2021 are as follows:

Health Promotion Activities in 2021

2021	
Infectious disease prevention	<ul style="list-style-type: none"> A total of 5,605 people participated in the COVID-19 vaccination project. We provided paid vaccination leave to increase vaccination rates.
COVID-19 pandemic prevention management	<ul style="list-style-type: none"> COVID-19 Prevention Response Team has formulated the “COVID-19 Infection Handling Procedures for Employees and Contractors,” established a COVID-19 infection incident notification/renewal system, and tracked and cared for employees. We strengthened the cleaning and disinfection of the workplace environment, prepared perfect and sufficient pandemic prevention equipment, and handled relevant protective measures such as pandemic prevention measures audit.
Occupational health services	<ul style="list-style-type: none"> We provided pre-employment physical examinations and regular on-the-job health examinations. There were 4,180 participants. In 2021, there were a total of 149 on-site visits by medical staff. ^(Note1)
Chronic disease prevention and health education promotion	<ul style="list-style-type: none"> We promoted through e-newsletters, THSR High Speed Vision Newsletter and columns, and provided 15 health education promotion activities, and the topics covered COVID-19 prevention, healthy weight loss, diet, metabolic syndrome, cardiovascular, oral health. We organized occupational medical consultation and follow-up services for high cardiovascular risk groups, and took administrative measures for those with health risks.
Healthy weight management	<ul style="list-style-type: none"> We continued to organize the “Summer Marathon to Fight Fat,” and planned incentives and added new competition rules, attracting a total of 706 people to participate in the event.
Fitness testing and core muscle group training	<ul style="list-style-type: none"> We organized core muscle group training for workers with heavy physical activities.
Health seminars	<ul style="list-style-type: none"> 11 health seminars were held live online and on-site, covering topics such as oral health, cerebrovascular disease prevention, drug abuse prevention, dietary patterns and obesity health education, with a total of 849 participants.
Healthy workplace certification	<ul style="list-style-type: none"> We actively implemented a smoke-free workplace environment and promote health promotion measures through the Health Promotion Administration’s “Healthy Workplace Certification - Health Promotion Label.”

Notes: Informal employees are also entitled to health promotion activities (except for annual health examination).

Stay-at-Home T Living Internal Online Activities

In 2021, due to the impact of COVID-19, THSRC organized the T Living internal online activities in response to the government’s publicity on pandemic prevention, which aimed to enhance team cohesiveness through funny projects during the pandemic prevention period while motivating colleagues to bring creativity to their home life. The relevant results of the project are as follows:

- “Stay-at-Home with Joy and Happy SharingSharing”: This event invited colleagues to share various interesting activities that individuals/parents and their children could do together at home, and a total of 277 online submissions from colleagues were received.

- “Donate Blood in Time and Love without Delay”: When the COVID-19 situation in Taiwan heated up in 2021, people were less likely to go out, resulting in a further shortage of blood stocks. THSRC actively appealed to our colleagues who was used to donating blood to show enthusiasm and donate blood together under the condition of good personal protection. This event attracted 273 people to sign up, and a total of 221 people had donated blood.
- “Second-hand Sales”: To promote sustainable use, THSRC encourages employees to bring the goods at home that are still in good condition to trade on the online platform, giving an old item a new life. There were a total of 220 items in this auction market, and more than 120 items have regained a second life.



Chairman Chiang Yao-Chung continues to take practical actions to blood donation, calling on colleagues to show their “epidemic” extra enthusiasm!



Chairman Chiang Yao-Chung enthusiastically responded to the “Second-hand Sales” by auctioning off the ink painting “Taiwan Grandma” transcription plate and donating the proceeds of the auction to the Happy Learning Association of the R.O.C.

Carrying for Society and Developing Local Area

THSRC has been in operation for more than 10 years. By providing convenient transportation services, we promote intercity exchanges and activate the development of local industries. In addition to fulfilling the responsibility as a company in the transportation industry, we hope to exert its own influence, dedicate resources to social welfare, and actively practice the responsibility of being a social citizen. In 2021, we invested nearly NT\$12 million in sponsorships for various social welfare activities to contribute to promoting co-prosperity in Taiwan. In addition, the astonishing “Taroko accident” and “Kaohsiung Building Fire” accident occurred in Taiwan in 2021. Based on the spirit of humane care, THSRC has, upon approval by the Board of Directors, made a significant announcement on the Company’s website to donate NT\$5 million to the designated account for each of the two cases to assist the victims in follow-up medical treatment, rehabilitation and financial support.

In 2021, THSRC invested and supported the preservation and renovation of the “Shinkansen 0-series trains,” and assigned the National Science and Technology Museum to conduct research on the 0-series trains, and won the “Gold Award” of the permanent award of the 15th Arts & Business Awards. The projects or plans that THSRC enhances arts and culture, and promotes social care and ecological restoration will be explained in subsequent subsections.

Enhancing Arts and Culture

“THSR ART Together Program”

In view of the need for stage and audience support for arts and cultural teams in Taiwan, we launched the “THSR ART Together Program” in 2015, inviting schools, art groups, or individuals with performance experience to perform at the stations. Since the launch of the program to the end of 2021, the number of performances reached 576, with a total of 17,123 people performing at various THSRC operating bases, which not only provided opportunities for passengers to get close to art and cultural performances, but also provided a stage for performance by the art and cultural groups.



Performances at stations during the 2021 “THSR ART Together Program”

Promotion of Railway Culture - Donation of THSR's Decommissioned Maintenance Vehicles

THSRC is the forerunner of the collection of cultural relics in the rail industry, and has planned to collect various cultural relics since the construction period. After the "THSR Memorabilia Collection Project" was launched in 2003, the pace of cultural and historical investigation and research has not stopped since then, attracting a number of units for benchmark study. In 2021, the Japanese-made MO-52787 track car and D29 flatbed car received by THSRC maintenance department during the construction period completed their term of service. As they are important cultural relics of railway development, we decided to donate them to the "Preparatory Office of Railway Museum" for display and exchange. The decommissioned vehicles were successfully delivered to the Railway Museum for storage in August 2021, leaving precious historical resources for HSR construction.



THSRC and the Railway Museum staff worked together to transport the maintenance vehicles to the museum site for preservation

Promotion of Social Care

The High-Speed Educational Endowment Program

THSRC has long been concerned about the development of disadvantaged groups, and actively cooperates with non-profit organizations. Since 2010, we have been working with numerous foundations on the public welfare activity "High-Speed Educational Endowment Program." We provided a platform for fundraising, and all the funds raised were handed over to the foundations we worked with for coordination and use. As of 2021, we had organized the event for 12 consecutive years. The cumulative amount of funds raised has exceeded NT\$148 million, and we have successfully helped more than 27,000 children in need. Among them, in 2021, we worked with the Down Syndrome Foundation R.O.C. in fundraising and raised a fund of over NT\$9.5 million to help children develop an independent life and have a better future through the study program.



2021 The High-Speed Educational Endowment Program Press Conference

Annual THSRC Winter Outreach Blood Drive

Since 2012, THSRC has held the public welfare activity "Annual THSRC Winter Outreach Blood Drive" at the headquarters and stations at the end of the year, which was responded by many employees, passengers and people enthusiastically. In 2021, a total of 2,743 people attended the event with 4,153 units of blood donated; cumulatively, more than 17,920 units of blood have been raised, which created a warm atmosphere in the cold winter when the blood inventory was insufficient.



THSRC Chairman Chiang, Yao-Chung participated in the "Annual THSRC Winter Outreach Blood Drive" event and invited the public to blood donation

THSRC Smiling Train Program

Since 2009, THSRC has worked with non-profit and social welfare organizations in various places on the "THSRC Smiling Train Program" to allow target groups to take the THSR train for free or with discounted fares to experience the convenient and efficient services of high-speed rail, and have a chance to experience the beauty of the customs of different counties and cities in Taiwan. As of the end of 2021, we had assisted 812 disadvantaged groups, with a total of 144,882 passengers.



2021 "THSRC Smiling Train Program" assisted Taichung City Welfare for the Disabled Association to make the travel dream come true

HSR Camps

In order to cultivate students' vision of railway industry, The Company has organized summer and winter activities known as "HSR Camp" since 2008. However, due to the impact of COVID-19 in 2021, the scale of the activities was adjusted for the winter camps - junior college and university group, senior high and vocational high school group, junior high school group, and primary school group. One camp was held for each group with a total of four camps held throughout the year. It attracted more than 2,300 students to apply, and a total of 120 students participated in the camp courses.



Students enthusiastically participated in the 2021 HSR Camp (winter camp) activities

Promotion of Ecological Restoration

Local Commitment to Pheasant-Tailed Jacana Restoration

In order to protect the habitat and survival of Pheasant-Tailed Jacana, THSRC has established the "Pheasant-Tailed Jacana Ecological Education Park" jointly with the government and non-governmental organizations. We not only actively collaborate with experts and scholars, but also seek the participation of volunteers. Over the past 21 years, THSRC has invested more than NT\$67 million in restoration of Pheasant-Tailed Jacana. According to statistics provided by the Wild Bird Society of Tainan, the number of Pheasant-Tailed Jacana group in the park's habitat has greatly risen from 9 (including females, males, and fledglings) in a single year in 2000 to 120 in a single year in 2021. With the expansion of habitat area for the Pheasant-Tailed Jacana group, the number of Pheasant-Tailed Jacanas in the Greater Tainan region grew from 275 in 2009 to 2,252 in 2021, thereby demonstrating our effects of promotion of the preservation of Pheasant-Tailed Jacanas.

THSRC not only builds a Pheasant-Tailed Jacana restoration park, but also actively promotes ecological education, assists in making park instruction facilities, and designs the display and the interactive areas to specifically exhibit the effects of restoration works. Nearly 261,000 people have visited the "Pheasant-Tailed Jacana Ecological Education Park" from its establishment until 2021. This park not only provides the opportunity for public to learn about the ecology of Pheasant-Tailed Jacanas, but has also been recognized by the international ecological conservation organizations, thus becoming a rare successful experience of "coexistence between development and conservation."

Disclosure of Indicator of Sustainability Accounting Standards Board (SASB)

Topic to be Disclosed	Indicator to be Disclosed	Unit	Indicator Code	2021	Other explanations
Enterprise Operations Indicator	Number of carloads transported	Number	TR-RA-000.A	43,459,560	Due to THSRC's business nature, the transportation services are mainly measured by number of people. Therefore, the data provided here is the total number of passengers who took THSR trains in 2021.
	Number of intermodal units transported	Number	TR-RA-000.B	N/A	Due to THSRC's business nature, the transportation services are mainly measured by number of people, and there are no transportation services for goods, so this indicator is not applicable.
	Track miles Track miles include the total length of the route available for the running of the trains, and include multi-track routes into the calculation. For example, if there are two tracks for each mile of route, it should be counted as 2 track miles	Miles	TR-RA-000.C	The total length of track miles is 438.64 miles (701.766 kilometers in total for the eastbound and westbound mainline of THSRC)	This data calculated here covers the mainline and the sub-line, and the calculation unit is Miles.
	Revenue ton miles (RTM) Revenue in metric ton miles (RTM) is defined as the revenue earned from transporting one metric ton of cargo one kilometer. Revenue in metric ton mile (RTM) is calculated as the number of transport miles per stage * revenue per metric ton of cargo	Amount	TR-RA-000.D	NT\$6.18	Due to THSRC's business nature, the transportation services are mainly measured by number of people, and there is no transportation of goods. Therefore, this indicator is presented as "revenue per 1 passenger mile," which is calculated as follows: <ul style="list-style-type: none"> • NT\$29,084,574,000 in ticketing revenue in 2021 • 43,459,560 passengers in 2021 • The average travel distance per passenger in 2021 was 174.16 kilometers • Ticketing revenue per passenger = Ticketing revenue/Number of passengers = NT\$669.23 • Revenue per passenger traveling 1 kilometer = Ticketing revenue per passenger/ Average travel distance per passenger = NT\$3.84 • Revenue per passenger traveling 1 mile = Revenue per passenger travelling 1 kilometer/0.6214 = NT\$6.18
	Number of employees	Number	TR-RA-000.E	4,668	THSRC employees calculated here cover contract employees, seconded employees, outsourced employees and employees on non-fixed term contracts.
Greenhouse Gas Emission	Gross global Scope 1 emissions	Metric tons CO ₂ -e	TR-RA-110a.1	1,091.79 metric tons CO ₂ -e	The calculation method of THSRC Scope 1 complies with the ISO 14064-1 specification. In 2021, we voluntarily conducted organizational greenhouse gas emission inventory audit and external verification at 12 stations, and successfully obtained the ISO 14064-1 Verification Opinion Statement. Emission factors for gasoline and diesel fuel were corresponding factors from Version 6.0.4 of the Greenhouse Gas Emission Factor Management Table published by the Environmental Protection Administration; the Global Warming Potential was taken from the fourth assessment report of the Intergovernmental Panel on Climate Change. For more information on greenhouse gas emissions, please refer to the subchapter titled "Low-carbon Train Operation and Environmental Sustainability" of the report. 🔗

Disclosure of Indicator of Sustainability Accounting Standards Board (SASB)

Topic to be Disclosed	Indicator to be Disclosed	Unit	Indicator Code	2021	Other explanations
Greenhouse Gas Emission	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	—	TR-RA-110a.2	The electricity used by trains carrying passengers is the energy mainly used by THSRC, which is a scope 2 emission. The direct greenhouse gas emissions in scope 1 mainly come from the use of gasoline and diesel fuel and the escape of air-conditioning refrigerants, which are used for engineering maintenance vehicles and emergency generators at stations. The overall ratio is relatively low, accounting for only 1% of the total energy consumption, so there is no further emission reduction target for Scope 1. However, in accordance with the "Greenhouse Gas Reduction and Management Act," the Company shall follow the "Periodic Regulatory Goals of the Greenhouse Gas Emissions" approved by the government, and cooperate with the competent authorities in rail transportation and station operations to promote greenhouse gas reduction policies and set reduction targets. The current target is to set the annual carbon reduction rate at greater than 1.5% as our carbon emission target using the amount of carbon dioxide emission per passenger-kilometer as an indicator.	For more information on greenhouse gas emissions, please refer to the subchapter titled "Low-carbon Train Operation and Environmental Sustainability" of the report. ↗
	(1) Total energy consumption (2) Proportion of renewable energy to total energy use	Gigajoules (GJ), Percentage (%)	TR-RA-110a.3	(1) 2,027,688.73 GJ (2) 0.039%	1. The THSRC's total energy use calculated here covers the total energy directly used during the reporting period. The data is sourced from the energy product unit heating value table announced in the Energy Statistics Handbook 2016 of the Bureau of Energy. 2. The proportion of renewable energy to total energy use of THSRC is calculated as (Renewable energy use/Total energy use), which is disclosed in percentage (%) as the unit. For more information on energy use, please refer to the subchapter titled "Low-carbon Train Operation and Environmental Sustainability" of the report. ↗
Air Quality	(1) Total emissions of air pollutants (2) NOx (excluding N ₂ O) emissions (3) Particulate material (PM ₁₀) emissions	Metric tons	TR-RA-120a.1	(1) 5.03 metric tons (2) 0 metric tons (3) 1.32 metric tons	1. The air pollutants disclosed by THSRC cover the air pollutants directly emitted in the course of corporate operations, including stationary and mobile pollution sources, production plants, office buildings, and transportation fleets, which are calculated using the mass balance method. 2. The emission of NOx is mainly caused by the high-temperature combustion of vehicles, thermal power plants and boilers, and THSRC uses externally purchased or acquired electricity during the entire operation of the trains, so there is no emission of nitrogen oxides. 3. The data of particulate materials (PM ₁₀) in 2021 was sourced from the amount reported in the "Stationary Source Air Pollution Control Fees and Emissions Reporting Integrated Management System" of the Environmental Protection Administration. The calculation method is activity intensity x (1 - control efficiency %) x emission factor. For more information on air quality, please refer to the subchapter titled "Air Pollution Management" of the report. ↗

Disclosure of Indicator of Sustainability Accounting Standards Board (SASB)

Topic to be Disclosed	Indicator to be Disclosed	Unit	Indicator Code	2021	Other explanations
Employee Health and Safety	(1) Total Recordable Incident Rate (TRIR) (2) Fatality rate of work-related injuries (3) Near Miss Frequency Rate (NMFR)	Percentage (%)	TR-RA-320a.1	(1) 0.10 (2) 0 (3) 2.58	<p>The indicator calculated here covers THSRC's employees and contractors. The calculation formula of the indicator is as follows:</p> <p>1. Total Recordable Incident Rate (TRIR) is calculated as: (Number of recordable incident/Total working hours) × 200,000. The 2021 data is calculated as: 5/(9,412,680+732,576)*200,000=0.10</p> <p>2. Fatality rate of work-related injuries is calculated as: (Number of recordable fatalities/Total working hours) × 200,000. The 2021 data is calculated as: 0/(9,412,680+732,576)*200,000=0</p> <p>3. Near Miss Frequency Rate (NMFR) is calculated as: (Count of near miss incident/ Total working hours) × 200,000. The 2021 data is calculated as: 131/(9,412,680+732,576)*200,000=2.58</p>
Competitive Behavior	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	Amount	TR-RA-520a.1	0	<p>The Company has no legal proceedings related to the anti-competitive conduct provisions in 2021. High-speed rail transportation is a key infrastructure in Taiwan. THSRC plays a role as a service provider. For a long time, legal compliance has been regarded as a material topic of sustainable development. We not only formulate legal compliance promotion plans, but also track legal compliance risks through quarterly legal compliance representative meetings, and regularly report the tracking results to the Board of Directors to minimize regulatory risks. For more information on legal compliance, please refer to the subchapter titled "Sustainable Governance and Ethical Corporate Management" of the report. 🔗</p>
Accident & Safety Management	Number of accidents and incidents	Number	TR-RA-540a.1	0	<p>The statistical standards for the number of accidents and incidents refer to the definitions in Chapter 6 of the "Railway Rules," and the scope of disclosure covers collisions, derailments, fires, railway crossings, casualties, equipment damage, operation interruptions, and other accidents. In 2021, there were no major traffic accidents nor general traffic accidents occurred in THSRC.</p> <p>THSRC has always regarded operational safety as its highest responsibility since its operation, and regarded safety management as a material topic of sustainable development for a long time. We not only build an operational safety management system with risk management as the backbone, but also review the implementation of safety management through the Safety Committee to ensure operational safety. For more information on operational safety and risk management, please refer to the subchapter titled "Safety Services and Responsible Transportation" of the report. 🔗</p>
	(1) Number of accident releases (2) Number of non-accident releases (NARs)	Number	TR-RA-540a.2	(1) 0 (2) 0	<p>THSRC mainly provides human-based transportation services. Hazardous substances are not handled and transported in its general operation and transportation process, so this indicator is not applicable.</p>

Disclosure of Indicator of Sustainability Accounting Standards Board (SASB)

Topic to be Disclosed	Indicator to be Disclosed	Unit	Indicator Code	2021	Other explanations
Accident & Safety Management	Number of Federal Railroad Administration (FRA) recommended violation defects	Number	TR-RA-540a.3	2	<p>The proposed calculation of the number of violation defects refers to the provisions of Article 47 of the "Implementation Measures for the Supervision of Local Private and Special Railways." The Railway Bureau of the Ministry of Transportation and Communications regularly inspects the violation defects of high-speed railways, including the following: organizational status, operating status, financial status, engineering status, driving safety management status, locomotive and vehicle maintenance status, route construction and maintenance status, and other related matters.</p> <p>In 2021, the Railway Bureau proposed two matters for improvement, including reviewing the operation mechanism of the broken track detection system and improving the peeling of the mortar layer of the tunnel. THSRC has taken active improvement measures. Regarding the operation mechanism of the broken track detection system, the Company has taken detection and protection actions, strengthened the alarm system of rail-break detection measures, and increased the monitoring frequency; for the peeling of the mortar layer of the tunnel, the Company has removed the peeled mortar layer and investigated the safety of the remaining fake tunnels at the entrance of the standard port. The improvement measures for the above two projects have been reported to the Railway Bureau of the Ministry of Transportation and Communications in accordance with the regulations. For more information on quality management, please refer to the subchapter titled "Convenience, Attentiveness, and Maintaining Relationships" of the report. ↗</p>
	Frequency of internal railway integrity inspections (Number of inspections per week*Inspected track miles / Total main track miles)	%	TR-RA-540a.4	50%	<p>This indicator is calculated on the basis of (Number of inspections per week × Inspected track miles) / (Total main track miles). In 2021, a track length of 175.438 kilometers of THSRC's two main eastbound and westbound tracks were inspected, and inspections were carried out twice a week. The total main track length is 701.766 kilometers, so by introducing the calculation formula, the railway integrity frequency (Twice a week * 175.438 kilometers) / (701.766 kilometers) = 50%. For more information on operational safety and risk management, please refer to the subchapter titled "Safety Services and Responsible Transportation" of the report. ↗</p>

Appendices

Table 1 THSRC Industry Associations Participation in 2021

Industry Association Participated	Description
International Union of Railways (UIC)	Exchange and collaboration with international railway operators
International High Speed Rail Association	Exchange and collaboration with international high-speed rails
Chung-Hwa Railway Industry Development Association	Development and promotion of the railway industry
Chinese Institute of Transportation	Development and promotion of the railway industry
Rail Engineering Society of Taiwan	Development and promotion of the railway industry
Supply Management Institute, Taiwan	Exchange in procurement-related expertise and participation in related courses
Taiwan Railway Economy Development Association	Development and promotion of the railway industry
Chinese Society for Quality	Exchange in quality management and participation in related courses
Taiwan Visitors Association	Tourism development and business promotion and exchange
Intelligent Transportation Society of Taiwan	Development and promotion of the transportation industry
Chinese Institute of Engineers	Exchange and promotion of civil engineering technology
Taiwan Stock Affairs Association	Exchange in stock affairs-related expertise and regulatory advancement
Taiwan Corporate Governance Association	Development and exchange in corporate governance
The Institute of Internal Auditors - Chinese Taiwan	Development and promotion of internal audit
Computer Audit Association	Development and exchange in corporate governance
Association of Industrial Relations, R.O.C.	Development of labor relations and participation in regulatory courses
Accounting Research and Development Foundation	Exchange and promotion of accounting business
Knowledge Management Practice Exchange Conference, China Productivity Center	Exchange and promotion of cross-industry knowledge
Taiwan Railways Tourism Association	Development of railway tourism and business promotion and exchange
Chinese East Asia Economic Association	Tourism development and business promotion and exchange
Chinese Society of Mechanical Engineers	Development and promotion of the railway industry
Center for Corporate Sustainability, Taiwan Institute for Sustainable Energy	Development and promotion of sustainability

Table 2 Information on Members of the Board of Directors

Title	Name	Elected (Taking Office) (9th Term)	Diversified Core Competences						
			Financial Accounting	Law practice	Marketing, Technology	Operation Management	Leadership Decision- making	Industrial Knowledge and Operation	Crisis management and International Market View
Chairman	Representative: Yao-Chung Chiang China Aviation Development Foundation	May 21, 2020			☑	☑	☑	☑	☑
Director	Representative: Wen-Jong Chi Ministry of Transportation and	Took office on April 26, 2021			☑	☑	☑	☑	☑
Former Director	Representative: Kuo-Tsai Wang Ministry of Transportation and Communications	May 21, 2020 (Resigned on April 26, 2021)			☑	☑	☑	☑	☑
Director	Representative: Chin-Hong Pan Ministry of Transportation and Communications	Took office on July 19, 2021	☑			☑	☑	☑	☑
Former Director	Representative: Yueh-Hsiang Chen Ministry of Transportation and Communications	Took office on July 23, 2020 (Resigned on July 19, 2021)	☑			☑	☑	☑	☑
Director	Representative: Lee-Ching Ko China Aviation Development Foundation	May 21, 2020			☑	☑	☑	☑	☑
Director	Representative: Chao-Tung Wong China Steel Corporation	May 21, 2020			☑	☑	☑	☑	☑
Director	Representative: Chao-Yi Chen Taiwan Sugar Corporation	May 21, 2020			☑	☑	☑	☑	☑
Director	Representative: Mao-Hsiung Huang TECO Electric & Machinery Co., Ltd.	May 21, 2020			☑	☑	☑	☑	☑
Director	Representative: Shien-Quey Kao Management Committee of National Development Fund, Executive Yuan	May 21, 2020	☑		☑	☑	☑		☑
Director	Representative: Kuo-Chih Liu Taipei Fubon Commercial Bank Co., Ltd.	May 21, 2020			☑	☑	☑	☑	☑
Independent Director	Kenneth Huang-Chuan Chiu	May 21, 2020		☑		☑	☑		☑
Independent Director	Tui Tsai	May 21, 2020					☑	☑	☑
Independent Director	Pai-Ta Shih	May 21, 2020	☑			☑	☑	☑	☑
Independent Director	Yung-Cheng (Rex) Lai	May 21, 2020					☑	☑	☑

Table 3 Human Resource Structure (1)

		2019		2020	
		Male	Female	Male	Female
Fixed-Term Contract	Contract Employees	28	53	17	48
	Seconded Employees	0	0	0	0
	Outsourced Employees	2	4	2	2
Total Number of Employees on Fixed-Term Contracts		30	57	19	50
Total Number of Employees on Non-Fixed Term Contracts		2,933	1,583	3,050	1,581
Percentage of Male to Female		64.37%	35.63%	65.86%	34.14%
Total Number of Employee		2,963	1,640	3,069	1,631

Table 3 Human Resource Structure (2)

		2019		2020	
		Male	Female	Male	Female
Rank	Vice President and above	0.17%	0.04%	0.19%	0.02%
	Assistant Vice President	0.33%	0.05%	0.32%	0.06%
	Manager and Deputy Manager	3.76%	0.91%	3.53%	0.87%
	Section Chief	10.62%	3.00%	10.96%	3.00%
	General Employees	49.49%	31.63%	50.30%	30.74%
Education	General and vocational high school and below	4.65%	1.52%	3.91%	0.53%
	University/Junior college	50.05%	30.70%	51.51%	30.77%
	Masters	9.39%	3.37%	9.57%	3.38%
	PhD	0.28%	0.04%	0.30%	0.02%
Other Multiple Indicators	Indigenous Employees	0.84%	0.25%	0.91%	0.27%
	Disabled Employees	0.75%	0.34%	0.77%	0.34%
Age	Management Level	Under 30 Years Old	0.00%	0.00%	0.00%
		30-50 Years Old	8.73%	2.95%	0.72%
		Over 50 Years Old	6.15%	1.04%	0.23%
	Non-Management Level	Under 30 Years Old	12.45%	12.27%	9.87%
		30-50 Years Old	35.39%	18.95%	22.49%
		Over 50 Years Old	1.65%	0.42%	1.38%

Notes: 1. The management level is defined as supervisors of section chief level and above.
2. The calculation formula is the number of people in the particular group / Total labor force.
3. Due to the rounding of the data presented, the sum of some data may not be exactly 100%.

Table 4 Statistics of New Employees

		2019				2020			
		Male		Female		Male		Female	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Category	Train Staff	9	0.20%	52	1.13%	2	0.04%	6	0.13%
	Station Staff	52	1.13%	79	1.72%	46	0.98%	68	1.45%
	Operation Control Personnel	6	0.13%	3	0.07%	4	0.09%	3	0.06%
	Train Driver	0	0.00%	0	0.00%	0	0.00%	0	0.00%
	Maintenance Personnel	136	2.95%	5	0.11%	91	1.94%	0	0.00%
	Others	46	1.00%	21	0.45%	44	0.93%	7	0.15%
Age	Under 30 Years Old	183	3.98%	143	3.11%	139	2.96%	77	1.64%
	30-50 Years Old	62	1.35%	17	0.37%	45	0.96%	6	0.13%
	Over 50 Years Old	4	0.08%	0	0.00%	3	0.06%	1	0.02%
Total		249	5.41%	160	3.48%	187	3.98%	84	1.79%

Table 5 Statistics of Ex-employees

		2019				2020			
		Male		Female		Male		Female	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Category	Train Staff	4	0.09%	32	0.70%	1	0.02%	7	0.15%
	Station Staff	40	0.87%	53	1.15%	3	0.06%	17	0.36%
	Operation Control Personnel	7	0.15%	0	0.00%	5	0.11%	2	0.04%
	Train Driver	4	0.09%	0	0.00%	1	0.02%	0	0.00%
	Maintenance Personnel	63	1.37%	4	0.09%	34	0.72%	0	0.00%
	Others	43	0.93%	16	0.35%	28	0.60%	15	0.32%
Age	Under 30 Years Old	89	1.93%	83	1.80%	35	0.74%	24	0.51%
	30-50 Years Old	50	1.09%	22	0.48%	21	0.45%	13	0.28%
	Over 50 Years Old	22	0.48%	0	0.00%	16	0.34%	4	0.09%
Total		161	3.50%	105	2.28%	72	1.53%	41	0.87%

Notes: 1. The turnover rate is calculated as: Annual turnover/Total number of employees at the end of the period.

Table 6 Training Hours

	2020			2021		
	Male	Female	Total	Male	Female	Total
All Employees at THSRC						
Average Number of Training Hours Per Capita	144.9	129.6	139.5	243.9	156.2	212.8
Average Number of Training Hours Per Training Session	6.5	6.5	6.5	6.8	5.4	6.3
Average class hours for different ranks						
Vice President and above	11.6	9.6	11.2	16.4	14.0	16.1
Assistant Vice President	10.3	15.0	10.6	30.3	27.5	29.8
Manager and Deputy Manager	19.5	18.1	19.2	122.9	35.4	105.9
Section Chief	124.9	124.5	124.8	94.8	66.2	88.5
General Employees	163.3	128.6	149.8	264.4	162.4	226.7
Average Number of Class Hours for Different Categories						
Train Staff	161.8	205.2	197.4	71.7	97.0	92.4
Station Staff	178.6	158.1	164.9	226.4	239.6	235.0
Operation Control Personnel	148.6	191.6	157.6	739.6	817.1	755.5
Train Driver	315.3	513.9	340.9	989.8	1,135.7	1,003.8
Maintenance Personnel	160.3	156.3	160.3	224.5	51.8	223.3
Others	75.7	53.6	67.1	128.4	35.5	104.7

2020 Statement on Greenhouse Gas Emission Inspection at 12 HSR Stations

Statement TW21/00278GG

Greenhouse Gas Verification Statement

The Inventory of Greenhouse Gas emissions in year 2020 of
TAIWAN HIGH SPEED RAIL CORPORATION
13F, No. 66, Jingmao 2nd Rd., Nangang Dist., Taipei City 115, Taiwan (R.O.C.)
has been verified in accordance with ISO 14064-3:2006 as meeting the requirements of
ISO 14064-1:2006

Direct emissions
1,481.5537 tonnes of CO₂e
Energy indirect emissions
45,847.4916 tonnes of CO₂e
Direct emissions and energy indirect emissions
47,429.045 tonnes of CO₂e

Authorized by

David Huang
Senior Director
Date: 07 September 2021
Version 1

TGFSSA-15-1 2101
802 Taiwan Ltd.
New Taipei City 24603, Taiwan
1 (02) 22993279 1 (02) 22993403 www.sgs.com

This Statement is not valid without the full verification scope, objectives, criteria and findings available on the Statement.

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Statement TW21/00278GG, continued

SGS has been contracted by National Cheng Kung University Industrial Sustainable Development Center (hereinafter referred to as "NCKU-ISDC"), No. 1, Daxue Rd., East Dist., Tainan City, Taiwan (R.O.C.) for the verification of direct and indirect Greenhouse Gas emissions in accordance with
ISO 14064-3:2006
as provided by TAIWAN HIGH SPEED RAIL CORPORATION (hereinafter referred to as "TAIWAN HIGH SPEED RAIL") - 13F, No. 66, Jingmao 2nd Rd., Nangang Dist., Taipei City 115, Taiwan (R.O.C.), in the GHG Assertion in the form of GHG report covering GHG emissions of the period 01 January 2020 to 31 December 2020.

Roles and responsibilities
The management of TAIWAN HIGH SPEED RAIL is responsible for the organization's GHG information system, the development and maintenance of records and reporting procedures in accordance with that system, including the calculation and determination of GHG emissions information and the reported GHG emissions.

It is SGS's responsibility to express an independent GHG verification opinion on the GHG emissions as provided in the GHG Assertion for the period 01 January 2020 to 31 December 2020.

SGS conducted a third party verification of the provided GHG assertion against the principles of ISO 14064-1:2006, ISO 14064-3:2006 and TW EPA Guidelines for GHG Validation and Verification (2010.12) in the period 06 August 2021 to 24 August 2021. The verification was based on the verification scope, objectives and criteria as agreed between NCKU-ISDC and SGS on 21 April 2020.

Level of Assurance
The level of assurance agreed is that of reasonable assurance.

Scope
NCKU-ISDC has commissioned an independent verification by SGS Taiwan of reported GHG emissions of TAIWAN HIGH SPEED RAIL, arising from the high-speed rail transportation service activities, to establish conformance with ISO 14064-2006 principles within the scope of the verification as outlined below.

This Statement is not valid without the full verification scope, objectives, criteria and findings available on the Statement.

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Statement TW21/00278GG, continued

This engagement covers verification of emission from anthropogenic sources of greenhouse gases included within the organization's boundary and is based on ISO 14064-3:2006.

- Title or description activities: GHG verification for TAIWAN HIGH SPEED RAIL in year 2020.
- Location/boundary of the activities:

Location	Address
Nangang Station	No. 318, Sec. 1, Nangang Rd., Nangang Dist., Taipei City 115, Taiwan (R.O.C.)
Taipei Station	No. 3, Beiping W. Rd., Zhongzheng Dist., Taipei City 100, Taiwan (R.O.C.)
Banqiao Station	No. 7, Sec. 2, Xianmin Blvd., Banqiao Dist., New Taipei City 220, Taiwan (R.O.C.)
Taiyuan Station	No. 6, Sec. 1, Gaolie N. Rd., Zhongli Dist., Taoyuan City 320, Taiwan (R.O.C.)
Hsinchu Station	No. 6, Gaolie 7th Rd., Zhubei City, Hsinchu County 302, Taiwan (R.O.C.)
Miaoli Station	No. 268, Gaolie 3rd Rd., Hsuehshing Township, Miaoli County 356, Taiwan (R.O.C.)
Taichung Station	No. 6, Zhonggu 2nd Rd., Wuri Dist., Taichung City 414, Taiwan (R.O.C.)
Changhua Station	No. 98, Sec. 2, Zhonggu Rd., Taichung Township, Changhua County 520, Taiwan (R.O.C.)
Yulin Station	No. 301, Zhongshan E. Rd., Huwei Township, Yunlin County 632, Taiwan (R.O.C.)
Chiayi Station	No. 166, Gaolie W. Rd., Taibao City, Chiayi County 612, Taiwan (R.O.C.)
Tainan Station	No. 100, Gaolie Blvd., Gaijin Dist., Tainan City 711, Taiwan (R.O.C.)
Zuoying Station	No. 100, Gaolie Rd., Zuoying Dist., Kaohsiung City 813, Taiwan (R.O.C.)

- Physical infrastructure, activities, technologies and processes of the organization: The high-speed rail transportation service.
- GHG sources, sinks and/or reservoirs included: Sources as presented in the inventory spreadsheet provided by TAIWAN HIGH SPEED RAIL.
- Types of GHGs included: CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃.
- The IPCC 2007 AR4 GWP values are applied in this inventory.
- Electricity emission factor: 0.509 kgCO₂e/kWh (Announced by Bureau of Energy, Ministry of Economic Affairs in 2020)
- Divided activity: NA
- GHG information for the following period was verified: 01 January 2020 to 31 December 2020

This Statement is not valid without the full verification scope, objectives, criteria and findings available on the Statement.

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Statement TW21/00278GG, continued

- The version of inventory sheet:
 - Taichung Station: 11 August 2021
 - 11 other stations: 20 July 2021
- The version of GHG assertion: 24 August 2021
- Intended user of the verification statement: Private

Objective
The purposes of this verification exercise are, by review of objective evidence, to independently review:

- Whether the GHG emissions are as declared by the organization's GHG assertion
- The data reported are accurate, complete, consistent, transparent and free of material error or omission.

Criteria
Criteria against which the verification assessment is undertaken are the principles of ISO 14064-1:2006 and TW EPA Guidelines for GHG Validation and Verification (2010.12)

Materiality
The materiality required of the verification was considered by SGS to 5%, based on the needs of the intended user of the GHG Assertion.

Conclusion
TAIWAN HIGH SPEED RAIL, provided the GHG assertion based on the requirements of ISO 14064-1:2006. The GHG information for the period 01 January 2020 to 31 December 2020 disclosing emissions of 47,429.045 metric tonnes of CO₂ equivalent and 0.0000 metric tonnes of direct CO₂ emissions from the combustion of biomass are verified by SGS to a reasonable level of assurance, consistent with the agreed verification scope, objectives and criteria.

The emission of each site is described as below: Unit: tonnes of CO₂e

Site	Direct emissions	Energy indirect emissions	Direct emissions and energy indirect emissions
Nangang Station	32.0965	9,043.2055	9,075.302
Taipei Station	16.7686	6,526.9076	6,543.676
Banqiao Station	9.3404	5,655.8695	5,665.210

This Statement is not valid without the full verification scope, objectives, criteria and findings available on the Statement.

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Site	Direct emissions	Energy indirect emissions	Direct emissions and energy indirect emissions
Taiyuan Station	177.3371	3,286.0108	3,463.348
Hsinchu Station	140.2297	3,124.7957	3,265.025
Miaoli Station	0.9287	1,116.5694	1,117.498
Taichung Station	266.0145	5,419.1779	5,705.192
Changhua Station	1.0686	1,263.4472	1,264.516
Yulin Station	222.9361	1,461.0032	1,623.939
Chiayi Station	424.9881	2,625.6063	3,050.604
Tainan Station	166.7596	2,092.3224	2,259.082
Zuoying Station	3.0756	4,392.5762	4,395.652

SGS's approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions information and the controls in place to mitigate these. Our examination includes assessment, on a test basis, of evidence relevant to the amounts and disclosures in relation to the organization's reported GHG emissions.

We planned and performed our work to obtain the information, explanations and evidence that we considered necessary to provide a reasonable level of assurance that the GHG emissions for the period 01 January 2020 to 31 December 2020 are fairly stated.

We conducted our verification with regard to the GHG assertion of TAIWAN HIGH SPEED RAIL which included assessment of GHG information system, monitoring and reporting plan/protocol. This assessment included the collection of evidence supporting the reported data, and checking whether the provisions of the protocol reference, were consistently and appropriately applied.

In SGS's opinion the presented GHG assertion

- is materially correct and is a fair representation of the GHG data and information, and
- is prepared in accordance with ISO 14064-1:2006 and TW EPA Guidelines for GHG Validation and Verification (2010.12) on GHG quantification, monitoring and reporting.

This Statement is not valid without the full verification scope, objectives, criteria and findings available on the Statement.

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
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Confidentiality
The reports and attachments may contain relevantly confidential information of the clients. In addition to being submitted as governmental application or certification documents, the reports and attachments are not allowed to be edited, duplicated, or published without the clients' agreement in written form.

Avoidance of Conflict of Interest
The reports and attachments are completely complied with the standards and procedures that related-authorities established. The reports and attachments of auditing process are conducted with fairness and honesty. If not, the auditing institution not only has to bear the relevant compensation duties, but also to receive legal charge and punishment.

This statement shall be interpreted with the GHG assertion of TAIWAN HIGH SPEED RAIL as a whole.

Verifier Group
Above statements coincide with auditing process with fairness and impartiality, and aim at the emission of year 2020 of clients.

Lead Verifier: 

Note: This Statement is issued on behalf of Client, by SGS Taiwan Ltd. ("SGS") under its General Conditions for Greenhouse Gas Verification Services available at http://www.sgs.com/terms_and_conditions.htm. The findings recorded herein are based upon an audit performed by SGS. A full copy of this statement, the findings and the supporting GHG Assertion may be consulted at TAIWAN HIGH SPEED RAIL CORPORATION, 13F, No. 66, Jingmao 2nd Rd., Nangang Dist., Taipei City 115, Taiwan (R.O.C.) This Statement does not relieve Client from compliance with any relevant, federal, national or regional laws and regulations with any public or non-public persons in such regulations. Signatories to the contract are not binding on SGS and SGS shall have no responsibility who is a party other than the Client.

This Statement is not valid without the full verification scope, objectives, criteria and findings available on the Statement.

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Opinion Statement



INDEPENDENT ASSURANCE OPINION STATEMENT

2021 Taiwan High Speed Rail Sustainability Report

The British Standards Institution is independent to Taiwan High Speed Rail Corporation (hereafter referred to as THSRC in this statement) and has no financial interest in the operation of THSRC other than for the assessment and verification of the sustainability statements contained in this report.

This independent assurance opinion statement has been prepared for the stakeholders of THSRC only for the purposes of assuring its statements relating to its sustainability report, more particularly described in the Scope below. It was not prepared for any other purpose. The British Standards Institution will not, in providing this independent assurance opinion statement, accept or assume responsibility (legal or otherwise) or accept liability for or in connection with any other purpose for which it may be used, or to any person by whom the independent assurance opinion statement may be read.

This independent assurance opinion statement is prepared on the basis of review by the British Standards Institution of information presented to it by THSRC. The review does not extend beyond such information and is solely based on it. In performing such review, the British Standards Institution has assumed that all such information is complete and accurate.

Any queries that may arise by virtue of this independent assurance opinion statement or matters relating to it should be addressed to THSRC only.

Scope

The scope of engagement agreed upon with THSRC includes the followings:

1. The assurance scope is consistent with the description of 2021 Taiwan High Speed Rail Sustainability Report.
2. The evaluation of the nature and extent of the THSRC's adherence to AA1000 AccountAbility Principles (2018) and the reliability of specified sustainability performance information in this report as conducted in accordance with type 2 of AA1000AS v3 sustainability assurance engagement.

This statement was prepared in English and translated into Chinese for reference only.

Opinion Statement

We conclude that the 2021 Taiwan High Speed Rail Sustainability Report provides a fair view of the THSRC sustainability programmes and performances during 2021. The sustainability report subject to assurance is materially correct without voluntary omissions based upon testing within the limitations of the scope of the assurance, the information and data provided by the THSRC and the sample taken. We believe that the performance information of Environment, Social and Governance (ESG) are correctly represented. The sustainability performance information disclosed in the report demonstrate THSRC's efforts recognized by its stakeholders.

Our work was carried out by a team of sustainability report assurers in accordance with the AA1000AS v3. We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that THSRC's description of their approach to AA1000AS v3 and their self-declaration in accordance with GRI Standards. Core opinion were fairly stated.

Methodology

Our work was designed to gather evidence on which to base our conclusion. We undertook the following activities:

- a review of issues raised by external parties that could be relevant to THSRC's policies to provide a check on the appropriateness of statements made in the report
- discussion with managers on THSRC's approach to stakeholder engagement. Moreover, we had sampled 2 external stakeholders to conduct interview
- interview with 30 staffs involved in sustainability management, report preparation and provision of report information were carried out
- review of key organizational developments
- review of the extent and maturity of the relevant accounting systems for financial and non-financial reports
- review of the findings of internal audits
- the verification of performance data and claims made in the report through meeting with managers responsible for gathering data
- review of the processes for gathering and ensuring the accuracy of data, followed data trails to initial aggregated source and checked sample data to greater depth during site visits
- the consolidated financial data are based on audited financial data, we checked that this data was consistently reproduced

- review of supporting evidence for claims made in the reports
- an assessment of the organization's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality, Responsiveness and Impact as described in the AA1000AP (2018)

Conclusions

A detailed review against the Inclusivity, Materiality, Responsiveness and Impact of AA1000AP (2018) and sustainability performance information as well as GRI Standards is set out below.

Inclusivity

In this report, it reflects that THSRC has continually sought the engagement of its stakeholders and established material sustainability topics, as the participation of stakeholders has been conducted in developing and achieving an accountable and strategic response to sustainability. There are fair reporting and disclosures for the information of Environment, Social and Governance (ESG) in this report, so that appropriate planning and target-setting can be supported. In our professional opinion the report covers the THSRC's inclusivity issues and has demonstrated sustainable conduct supported by top management and implemented in all levels among organization.

Materiality

The THSRC publishes material topics that will substantively influence and impact the assessments, decisions, actions and performance of THSRC and its stakeholders. The sustainability information disclosed enables its stakeholders to make informed judgements about the THSRC's management and performance. In our professional opinion the report covers the THSRC's material issues.

Responsiveness

THSRC has implemented the practice to respond to the expectations and perceptions of its stakeholders. An Ethical Policy for the THSRC is developed and continually provides the opportunity to further enhance THSRC's responsiveness to stakeholder concerns. Topics that stakeholder concern about have been responded timely. In our professional opinion the report covers the THSRC's responsiveness issues.

Impact

THSRC has identified and fairly represented impacts that were measured and disclosed in probably balanced and effective way. THSRC has established processes to monitor, measure, evaluate and manage impacts that lead to more effective decision-making and results-based management within an organization. In our professional opinion the report covers the THSRC's impact issues.

Performance information

Based on our work described in this statement, specified sustainability performance information such as GRI Standards disclosures disclosed in this report, THSRC and BSI have agreed upon to include in the scope. In our view, the data and information contained within 2021 Taiwan High Speed Rail Sustainability Report are reliable.

GRI Sustainability Reporting Standards (GRI Standards)

THSRC provided us with their self-declaration of in accordance with GRI Standards. Core option (For each material topic covered by a topic-specific GRI Standard, comply with all reporting requirements for at least one topic-specific disclosure). Based on our review, we confirm that sustainable development disclosures with reference to GRI Standards' disclosures are reported, partially reported or omitted. In our professional opinion the self-declaration covers the THSRC's sustainability topics.

Assurance level

The high level assurance provided is in accordance with AA1000AS v3 in our review, as defined by the scope and methodology described in this statement.

Responsibility

This sustainability report is the responsibility of the THSRC's chairman as declared in his responsibility letter. Our responsibility is to provide an independent assurance opinion statement to stakeholders giving our professional opinion based on the scope and methodology described.

Competency and Independence

The assurance team was composed of Lead auditors experienced in relevant sectors, and trained in a range of sustainability, environmental and social standards including AA1000AS, ISO 14001, ISO 45001, ISO 14064 and ISO 9001. BSI is a leading global standards and assessment body founded in 1901. The assurance is carried out in line with the BSI Fair Trading Code of Practice.



...making excellence a habit.™

Statement No: SRA-TW-2021016
2022-05-27

For and on behalf of BSI:

Peter Pu

Peter Pu, Managing Director BSI Taiwan

Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd., Ne-Hu Dist., Taipei 114, Taiwan, R.O.C.

A Member of the BSI Group of Companies.

GRI Index

GRI Standards	Disclosure	Corresponding Chapter or Subchapter	Page No.	Other Explanation
General Disclosures (Core Option)				
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	102-6 Markets served	• Operating Bases and Service	13	
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	102-16 Values, principles, standards and norms of behavior	• Ethical Management and Anti-Corruption	49	
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	102-18 Governance structure	• Corporate Governance Structure • Functional Committees	46	
	5. Stakeholder Engagement			
	102-40 List of stakeholder groups	• Identification of Stakeholders	6	
	102-41 Collective bargaining agreements	• Labor Relations and Employee Care	64	At present, THSRC has not signed any collective bargaining agreement
	102-42 Identifying and selecting stakeholders	• Identification of Stakeholders	6	
	102-43 Approach to stakeholder engagement	• Identification and Responses to Material Topics	8	
		• Quality Management Performance Review	33	
		• Customer Affirmation	37	
	102-44 Key topics and concerns raised	• Identification and Responses to Material Topics	8	
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	6. Reporting Practice			
	102-45 Entities included in the consolidated financial statements	• About this Report	2	
	102-46 Defining report content and topic boundaries	• Identification and Responses to Material Topics	8	
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	102-48 Restatements of information	• About this Report	2	
	102-49 Changes in reporting	• About this Report • Identification and Responses to Material Topics	2 8	
	102-50 Reporting period	• About this Report	2	
	102-51 Date of the most recent report	• About this Report		
	102-52 Reporting cycle	• About this Report		

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GRI 102: General Disclosures 2016	6. Reporting Practice			
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	102-54 Claims of reporting in accordance with the GRI Standards	• About this Report		
	102-55 GRI content index	• GRI Index	79	
	102-56 External assurance	• About this Report • Opinion Statement	2 78	
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	• Identification and Responses to Material Topics	8	
	103-2 The management approach and its components	• Disclosed under topics of concern	46	
	103-3 Evaluation of the management approach		58	
Material Topics				
GRI 103: Management Approach 2016	Transportation Safety Management			
	103-2 The management approach and its components	• Transportation - Professional Transportation	21	
	103-3 Evaluation of the management approach			
GRI 103: Management Approach 2016	Operating Strategies and Performance			
	103-2 The management approach and its components	• About Taiwan High Speed Rail Corporation	13	
	103-3 Evaluation of the management approach			
GRI 103: Management Approach 2016	201-1 Direct economic value generated and distributed	• Operational Performance	17	
	201-4 Financial assistance received from government	• Operational Performance • Identification of Stakeholders	17 6	
GRI 103: Management Approach 2016	Customer Relationship and Quality Management			
	103-2 The management approach and its components	• Technology - Innovative Technology	30	
	103-3 Evaluation of the management approach			
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	• Quality Management System (QMS)	33	

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GRI 103: Management Approach 2016	Employee Care and Labor Protection			
	103-2 The management approach and its components	• Touch - Sustainable Care	44	
	103-3 Evaluation of the management approach			
GRI 401: Employment 2016	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	• Labor Relations and Employee Care	64	
GRI 402: Labor/Management Relations 2016	402-1 Minimum notice periods regarding operational changes	• Labor Relations and Employee Care	64	THSRC adjusts the major changes in operation based on the requirements of the Labor Standards Act
GRI 403: Occupational Health and Safety 2018	Employee Care and Labor Protection			
	403-1 Occupational health and safety management system	• Management Mechanism and Effectiveness	66	
	403-2 Hazard identification, risk assessment, and incident investigation	• Employee Health and Safety Management Measures	68	
	403-3 Occupational health services	• Labor Relations and Employee Care	64	
	403-4 Worker participation, consultation, and communication on occupational health and safety	• Management Mechanism and Effectiveness	66	
	403-5 Worker training on occupational health and safety	• Management Mechanism and Effectiveness		
	403-6 Promotion of worker health	• Employee Health and Safety Management Measures	68	
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	• Management Mechanism and Effectiveness	66	
	403-8 Workers covered by an occupational health and safety management system	• Management Mechanism and Effectiveness		
	403-9 Work-related injuries	• Management Mechanism and Effectiveness		
403-10 Work-related ill health	• Management Mechanism and Effectiveness			

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	103-2 The management approach and its components	• Touch - Sustainable Care	44	
	103-3 Evaluation of the management approach			
GRI 205: Anti-corruption 2016	205-2 Communication and training about anti-corruption policies and procedures	• Ethical Management and Anti-Corruption	49	Partial disclosure
	205-3 Confirmed incidents of corruption and actions taken	• Ethical Management and Anti-Corruption	49	
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	• Corporate Governance Structure	46	
		• Nurturing Talent and Value Cultivation	58	
GRI 103: Management Approach 2016	Climate Change Mitigation and Adaptation			
	103-2 The management approach and its components	•Touch - Sustainable Care	44	
	103-3 Evaluation of the management approach			
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	• Energy Conservation and Carbon Reduction for Energy Management	53	
GRI 103: Management Approach 2016	Technological Innovation			
	103-2 The management approach and its components	•Technology - Innovative Technology	30	
	103-3 Evaluation of the management approach			
GRI 103: Management Approach 2016	Traffic Dispersion and Transit Services			
	103-2 The management approach and its components	• Transportation - Professional Transportation	21	
	103-3 Evaluation of the management approach			
GRI 103: Management Approach 2016	Sustainable Supply Chain Management			
	103-2 The management approach and its components	• Technology - Innovative Technology	39	
	103-3 Evaluation of the management approach			

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GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	• Operating Bases and Services • Localized Supply Chain	13 41	
GRI 414: New suppliers that were screened using social criteria	414-1 New suppliers that were screened using social criteria	• Supply Chain Communication and Requirements	41	
GRI 103: Management Approach 2016	Talent Appointment and Development			
	103-2 The management approach and its components	• Touch - Sustainable Care	44	
	103-3 Evaluation of the management approach			
GRI 202: Market Presence 2016	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	• Operating Bases and Services • Inclusive and Equal Employment	13 58	
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	• Inclusive and Equal Employment	58	
GRI 404: Training and Education 2016	404-1 404-1 Average hour of training per year per employee	• Results of Education and Training Programs	63	
	404-3 Percentage of employees receiving regular performance and career development reviews	• Talent Management and Motivation	63	
GRI 103: Management Approach 2016	Privacy and Information Security Management			
	103-2 The management approach and its components	• Technology - Innovative Technology	30	
	103-3 Evaluation of the management approach			
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	• Privacy and Information Security Management	35	
GRI 103: Management Approach 2016	Legal Compliance			
	103-2 The management approach and its components	• Touch - Sustainable Care	44	
	103-3 Evaluation of the management approach			

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GRI 307: Environmental Compliance 2016	307-1 Non-compliance with environmental laws and regulations	<ul style="list-style-type: none">• Legal Compliance• Neighboring Care• Use of Water Resources and Wastewater Treatment• Waste Disposal	49 28 56 57	
GRI 417: Marketing and Labeling 2016	417-2 Incidents of non-compliance concerning product and service information and labeling	<ul style="list-style-type: none">• Legal Compliance	49	
GRI 419: Socioeconomic Compliance 2016	419-1 Non-compliance with laws and regulations in the social and economic area	<ul style="list-style-type: none">• Legal Compliance		
GRI 103: Management Approach 2016	Noise and Vibration Management			
	103-2 The management approach and its components	<ul style="list-style-type: none">• Transportation - Professional Transportation	21	
	103-3 Evaluation of the management approach			
GRI 413: Local Communities 2016	413-2 Operations with significant actual and potential negative impacts on local communities	<ul style="list-style-type: none">• Neighboring Care	28	
GRI 103: Management Approach 2016	Energy Use Efficiency			
	103-2 The management approach and its components	<ul style="list-style-type: none">• Touch - Sustainable Care	44	
	103-3 Evaluation of the management approach			
GRI 302: Energy 2016	302-1 Energy consumption within the organization	<ul style="list-style-type: none">• Energy Conservation and Carbon Reduction for Energy Management	53	
	303-4 Reduction of energy consumption	<ul style="list-style-type: none">• Energy Conservation and Carbon Reduction for Energy Management		
GRI 303: Water and Effluents 2018	Resource Management			
	303-1 Interactions with water as a shared resource	<ul style="list-style-type: none">• Use of Water Resources and Wastewater Treatment	56	
	303-2 Management of water discharge-related impacts	<ul style="list-style-type: none">• Use of Water Resources and Wastewater Treatment		
	303-3 Water withdrawal	<ul style="list-style-type: none">• Use of Water Resources and Wastewater Treatment		

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GRI 103: Management Approach 2016	Ecological Impact Management			
	103-2 The management approach and its components	• Touch - Sustainable Care	44	
	103-3 Evaluation of the management approach			
GRI 305: Emissions 2016	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	• Air Pollution Management	58	
GRI 103: Management Approach 2016	Transportation Inclusion			
	103-2 The management approach and its components	• Transportation - Professional Transportation	21	
	103-3 Evaluation of the management approach			

Comparison of the “Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies”

Items	Corresponding Chapter or Subchapter
The content of this report shall cover the risk assessment of the relevant environmental, social, and corporate governance, and set the relevant performance indicators to manage the material topics identified	• Sustainable Governance and Ethical Corporate Management
Corporate governance of climate-related risks and opportunities; actual and potential climate-related shocks; methods to identify, assess and manage climate-related risks; and indicators and targets for assessing and managing climate-related issues	• Low-carbon Train Operation and Environmental Sustainability
Information on salaries of full-time non-supervisory employees	• Nurturing Talent and Value Cultivation

Comparison of the “Corporate Sustainable Development Best Practice Principles for TWSE/GTSM Listed Companies”

Items	Corresponding Chapter or Subchapter
Chapter 1. General Principles	• Sustainability Strategies and Goals
Chapter 2 Exercising Corporate Governance	• Sustainable Governance and Ethical Corporate Management
Chapter 3 Fostering a Sustainable Environment	• Low-carbon Train Operation and Environmental Sustainability
Chapter 4 Preserving Public Welfare	• Partner Relationship Management and Local Supply • Nurturing Talent and Value Cultivation • Carrying for Society and Developing Local Area
Chapter 5 Enhancing Disclosure of Corporate Social Responsibility Information	• About this Report
Chapter 6 Supplementary Provisions	• Identification and Responses to Material Topics



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