



# SHANGHAI RURAL COMMERCIAL BANK CO., LTD.

## 2023 ENVIRONMENTAL INFORMATION DISCLOSURE REPORT

# About this Report

## Reporting Period

The period covered by this Report is from January 1, 2023 to December 31, 2023.

## Reporting Scope

This Report is concerned with Shanghai Rural Commercial Bank Co., Ltd. with some information associated with Yangtze United Financial Leasing Co., Ltd., which was established by Shanghai Rural Commercial Bank Co., Ltd.

## Reporting Type

It is an annual report.

## Basic Framework

This Report is prepared in accordance with the requirements of *Guidelines for Environmental Information Disclosure of Financial Institutions (JR/T 0227-2021)* of the People's Bank of China, and referenced to the *Guidelines for Carbon Accounting Technology of Financial Institutions(Trial) (YBF [2021]No.119)* of the People's Bank of China, and the suggestions of *Reports from the Task Force on Climate-related Financial Disclosures (TCFD)* of Financial Stability Board.

## Data Resources

All information and data used in this Report is mainly from the internal documents or related statistical data of Shanghai Rural Commercial Bank Co., Ltd. Unless Otherwise specified, Green Credit in this Report is consistent with the statistical specification of National Financial Regulatory Administration, including green on-balance sheet loans, green off-balance sheet letter of credit and acceptance bill. All the monetary amounts are expressed in Chinese yuan.

## Short Names

For readability purpose, Shanghai Rural Commercial Bank Co., Ltd. is referred to as "SHRCB", the "Bank" or "We", and Yangtze United Financial Leasing Co., Ltd., is referred to as "Yangtze United Financial Leasing" throughout this report.

## Legal Entity Identifier

300300C1122131000095

## **Release Channels**

This Report is prepared in Chinese and English and the Chinese version shall prevail in event of any discrepancy. The Report is released and available for download on [www.shrcb.com](http://www.shrcb.com).

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# Section I Annual Overview

## I. About SHRCB

Shanghai Rural Commercial Bank Co., Ltd. (“SHRCB”, “Bank” or “We”) was founded on August 25, 2005. It is a state-owned corporate bank headquartered in Shanghai and the first provincial-level commercial bank from the joint-stock reform of rural credit cooperatives in China. On August 19th, 2021, the Bank was successfully listed on the main board of the A-share market and became a listed company on the main board of the Shanghai Stock Exchange, with the stock abbreviation “Hu Nong Shang Hang” and stock code 601825.

With the mission that “inclusive finance delivers better life”, building on the over 70-year history of Shanghai rural cooperative credit, and rooted in the metropolis, SHRCB works together with various industries, stays close to the people, and provides comprehensive and integrated financial services to businesses and individuals. With the ambition of benefiting the country and serving the people via finance, SHRCB solidly serves the real economy, and earnestly performs well in Five Tasks. With adherence to honesty, righteousness, robustness, innovation, and compliance, SHRCB integrates national strategies into its own strategies, striving to write a new chapter of high-quality finance serving the Chinese-style modernization.

The influence of SHRCB keeps increasing. It ranked 128th in UK The Banker’s Top 1000 Global Banks and 310th in the 2023 Fortune China 500 greatly up by 159 places and 174th in the 2024 Banking 500, up by 20 places compared to 2023. SHRCB holds a Standard & Poor’s credit rating of AAAspc with a stable outlook. In 2023, it was for the first time included into MSCI ESG ratings and awarded with A-rating, the highest ranking for domestic rural financial institutions.

SHRCB actively implements China’s “dual carbon” goals, practices the concept of sustainable development, and grasps the industry iteration and development trend under the dual carbon goals to drive green development via finance force. Moreover, SHRCB firmly and thoroughly promotes green finance to strengthen and deepen “green finance chapter” in terms of organizational framework, work mechanism, strategic system construction, business development, product innovation, management system, management tools, system and data, information disclosure and green operation.

## II. Green Development

### 1. Development vision

Adhering to the concept of sustainable development, SHRCB focuses on green agriculture, green energy, energy efficiency and environmental protection, green manufacturing and green building, and provides green financial services around green credit, green bonds, green service, green financing and green leasing, aiming to promote customers' green transformation development. Furthermore, SHRCB, with a long-term view, explores its development paths for financial transformation to create the greenest bank in Yangtze River Delta.

### 2. Strategic goals

SHRCB strives to achieve the amount of green financing services totaling 130 billion yuan by 2025, including 100 billion yuan of green credit and 16.5 billion yuan of on-balance-sheet and off-balance-sheet green bond investments..

### 3. Green finance milestones

In recent years, the Bank has actively embraced the concept of green development, closely integrating carbon peaking and carbon neutrality with its overall development strategy. By coordinating resources, we strive to be a witness and promoter of green finance in Shanghai, achieving significant results across various green finance business areas.

### 4. Green finance awards

In 2023, thanks to its outstanding performance and excellent practice in green finance, SHRCB acquired not only social recognition, but also a number of green finance awards, successfully building its brand image in green finance.

- ESG Golden Bull Award Pioneer Enterprise at China Social Responsibility 100 Forum





- The Best Financial Institution Award in GF 60 Green Finance Cases at 2023 Green Finance Forum of 60



- Top 30 Finance Pioneers among Chinese ESG Listed Companies



- Carbon Financial Practice Award of Shanghai Environment and Energy Exchange



- 10 Innovation Cases of Pudong Green Finance



- Great Case of Service Demonstration Zone

The *Pollutant Discharge Allowance Mortgage Loans for Green and High-quality Development of the Demonstration Zone* earned the title of “great cases of service demonstration zones” granted by the Financial Integration Innovation Development Alliance for Yangtze River Delta Integration Demonstration Zone.



### III. Annual Key Achievements

SHRCB remains committed to the principle of sustainable development, actively enhancing its green finance management system, fostering the growth of green initiatives and product innovation, and pioneering new models of eco-friendly operations. It is dedicated to becoming the greenest bank in the Yangtze River Delta region.

In 2023, the Bank excelled in executing its green finance strategy, achieving remarkable outcomes. We fulfilled the strategic objectives for the year across multiple areas, including creating a robust green management system, expanding green investment and financing, and optimizing our green operational practices. These accomplishments have solidified our groundwork for advancing the society's shift towards green, low-carbon initiatives and empowering social governance. By the end of 2023, we saw a remarkable surge in green loans, outpacing the overall loan growth rate for the same period. Our holdings of on-balance sheet green debt financing instruments ranked among the top in rural financial institutions nationwide, while the growth rate of green leasing was four times compared to the previous year.

## **1. Improving management system to lay a solid foundation for green development**

The Bank is committed to building a sustainable financial system backed by green finance. It continuously refines the “2+N” strategic framework for green finance, specifies strategic layouts and objectives, further elaborates on strategic implementation paths, establishes green finance management measures, enhances credit allocation policies, enriches green product systems and marketing strategies, and improves green finance service capabilities. These efforts provide solid institutional support for the high-quality development of green finance across the entire organization.

## **2. Expanding investing and financing scale to contribute to the green transition**

We concentrate on five key sectors: green agriculture, green energy, energy efficiency and environmental protection, green manufacturing and green building. Through five primary business directions—green credit, green bonds, green services, green wealth management, and green leasing—we provide all-around green finance services. As of the end of 2023, the Bank’s green credit balance stood at 61.431 billion yuan, marking an increase of 41.00%, significantly outpacing the overall credit growth rate for the same period; its holdings in on-balance sheet green bond investments reached 11.549 billion yuan, reflecting a growth rate of 27.84%, positioning the Bank at the forefront of rural financial institutions nationwide in the holdings of green debt financing instruments; the green leasing balance reached 10.147 billion yuan, up by 45.19%, four folding its growth rate from the previous year.

## **3. Innovating products and services to meet diversified financing needs**

We are committed to innovating green finance products, with “first-of-its-kind” initiatives emerging. For example, we acted as the co-lead underwriter for Shanghai’s first Carbon Neutrality/Rural Revitalization green medium-term notes, successfully launched innovative products such as the Water-saving Benefit program, CCER (China Certified Emission Reduction) pledges, and emission rights mortgages in Shanghai. We are also exploring corporate and individual carbon accounts to meet the diverse green financing needs of the market. We actively promote the deep integration of green finance and inclusive finance, extending financial services to numerous green agricultural clusters, such as the Nanhui honey peach and 8424 watermelon sectors.

#### **4. Accelerating digital transformation to increase the quality of green financial services**

The Bank embraces digital transformation, having completed the continuous iteration and upgrade of the first phase of the green finance business management system. Big data models are used for intelligent identification of green transactions. Furthermore, it is advancing the construction of the second phase, embedding green certification into the business processes to enhance operational efficiency. The Bank in collaboration with the Shanghai Environment and Energy Exchange, has established a carbon emissions trading clearing system. It provides services such as account opening, contract signing, withdrawal, deposit, inquiries, and reconciliation of funds related to carbon emissions trading. This system has been officially launched. The Bank remains committed to ongoing data governance efforts with steadily reinforcing the quality of foundation data.

#### **5. Making prospective exploration to enhance the capability against ESG risks**

We continuously strengthen environmental and climate-related risk management. Specifically, we identify and assess climate-related risks and opportunities. We conduct physical risk analysis for debenture issuers, ongoing environmental benefit assessments for green project loans, and expand the coverage of carbon emissions calculations for investing, financing, and operational activities. We explore climate transition stress testing and ESG risk management evaluation systems, gradually integrating climate risks into our comprehensive risk management framework.

#### **6. Enhancing disclosure for better transparency and public trust**

The Bank attaches great importance to information disclosure efforts. In 2023, we publicly released our first Environmental, Social, and Governance (ESG) report, the first environmental information disclosure report benchmarking against TCFD standards and the first report aligning with the Principles for Responsible Banking (PRB). These initiatives have reflected our proactive response to the concerns of stakeholders regarding key ESG issues, and showcased our commitment to social responsibility. The Bank is dedicated to elevating its brand image and social impact in green finance. In early 2023, we attained an A rating in the MSCI ESG assessment, becoming the highest-rated domestic rural financial institution in terms of ESG for the year.





SHRCB’s first ESG report and the first report benchmarking against TCFD standards for environmental information disclosure

### 7. Exploring green operation model to embody sustainability concept

The Bank actively explores new models for green operations. It has upgraded the Xin Project, an energy management platform that enables more scientific, accurate, and authentic monitoring of the Bank’s energy consumption data, and strengthened energy audits and conservation inspections. By introducing “carbon accounts” for all staff members, the Bank encourages employees to reduce energy consumption and carbon emissions, and to protect the environment in daily life. The Bank has advocated for paper-less office to reduce paper consumption and waste.

### 8. Driving low-carbon operations and technological innovation by creating green demonstration sites

The Bank prioritizes the development of green sites by optimizing layouts, adopting energy-efficient equipment, and enhancing energy management. These measures aim to reduce energy consumption and carbon emissions in site operations. Sijing Sub-branch in Songjiang District is a typical example of the green site campaign, having earned the title of Shanghai’s Demonstrate Site of Green Banking. Zhangjiang High-tech Sub-branch is the first banking outlet in Shanghai to achieve carbon neutrality. Since 2021, it has maintained carbon neutrality for three consecutive years and received carbon neutrality certification. The scope of greenhouse gas inventory has been expanded to methane, nitrous oxide, and others, demonstrating its commitment to social responsibility through its operations.



Honors for green operations of the Bank

## IV. Green Finance Performance

In 2023, the Bank's green finance business experienced substantial growth, with expansions in green credit, green bonds, green leasing, and other green financing activities. The Bank's asset structure has been further decarbonized, the scope of carbon emissions accounting for investing and financing activities expanded, with reduced carbon emission intensity.

### ➤ Green finance business

Indicator	Unit	2022	2023	Change	Change trend
Green credit balance	100 million yuan	435.67	614.31	41.00%	↑
Balance of on-balance sheet green bond investment holdings	100 million yuan	90.34	115.49	27.84%	↑
Green bonds invested via the funds under management	100 million yuan	16.59	21.39	28.97%	↑
Green bond underwriting size	100 million yuan	30.30	10.50	-65.35%	↓
Green lease balance	100 million yuan	69.89	101.47	45.19%	↑

### ➤ Energy and resource consumptions in the Bank's own operations<sup>1</sup>

Energy consumption		Unit	2021	2022	2023
Natural gas	Total	10,000 m <sup>3</sup>	28.09	30.79	32.96
	Per-capita	m <sup>3</sup>	29.08	29.21	30.46
Petroleum	Total	10kL	36.38	30.92	43.79

	Per-capita	L	37.66	29.33	40.48
Diesel	Total	10kL	4.14	3.04	7.15
	Per-capita	L	4.29	2.88	6.61
Water <sup>2</sup>	Total	Ton	9,593.00	9,605.00	11,525.00
	Per-capita	Ton	7.90	6.40	7.35
Electricity	Total	10,000 kWh	6,699.29	7,355.81	8,148.17
	Per-capita	kWh	6,935.80	6,978.28	7,531.35
Paper <sup>3</sup>	Total	Ton	45.15	37.43	26.80
	Per-capita	Kg	12.62	10.46	7.49

➤ Greenhouse gas emissions<sup>4</sup>

Emission type	Unit	2021	2022	2023
Total greenhouse gas emission	Ton	40,438.55	43,396.69	50,370.48
Scope I	Ton	1,515.68	1,446.45	1,878.67
Scope II <sup>5</sup>	Ton	38,922.87	41,950.24	46,469.00
Scope III	Ton	-	-	2,022.81
Per-capita greenhouse gas emissions	Ton/person	4.19	4.12	4.66
Greenhouse gas emissions per unit area	Ton/m <sup>2</sup>	0.07	0.07	0.08

➤ Environmental benefits of green credit<sup>6</sup>

Indicator name	Unit	2022	2023
Balance of project loans covered into the accounting scope	100 million yuan	54.21	76.68
Savings of tCEs	10,000 tons	62.21	150.94
Reduction of carbon dioxide emissions	10,000 tCO <sub>2</sub> e	192.42	346.65
Water savings	10,000 tons	7.59	386.17
Reduction of sulfur dioxide emissions	Ton	5,333.37	1,181.04
Reduction of nitrogen oxides emissions	Ton	1,517.99	159.08
Reduction of COD discharges	Ton	-	1,337.11
Reduction of ammonia nitrogen emissions	Ton	390.23	214.60
Reduction of total nitrogen emissions	Ton	422.94	100.69
Reduction of total phosphorus emissions	Ton	71.16	18.98
Reduction of smoke emissions	Ton	-	261.71
Reduction of VOC discharges	Ton	-	28.74

➤ Environmental benefits of green bonds<sup>7</sup>

Indicator name	Unit	2022	2023
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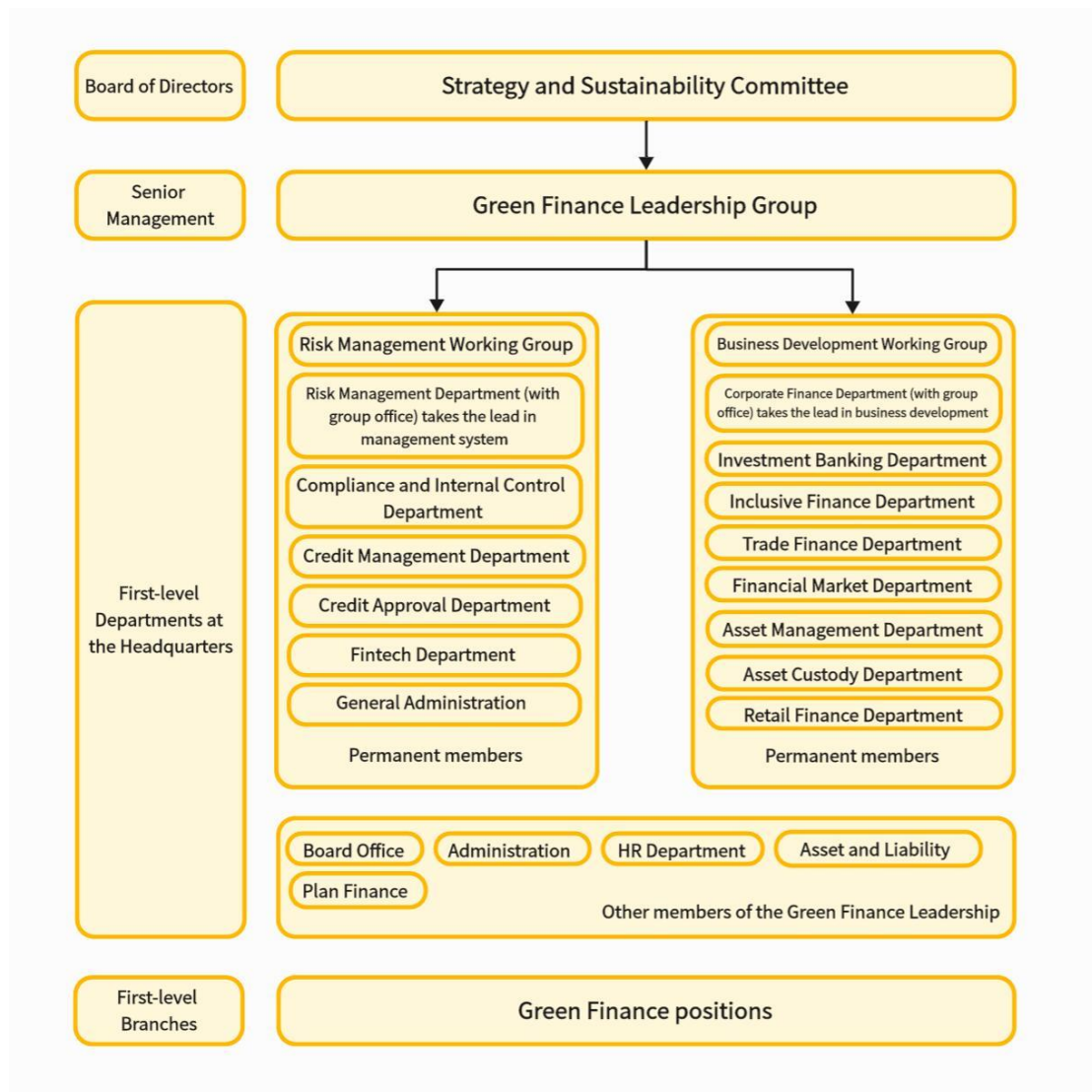
Balance of green bonds covered into the accounting scope	100 million yuan	48.60	15.40
Savings of tCEs	10,000 tons	-	16.19
Reduction of CO <sub>2</sub> e emissions	10,000 tCO <sub>2</sub> e	39.35	37.28
Reduction of sulfur dioxide emissions	Ton	-	93.15
Reduction of nitrogen oxides emissions	Ton	-	90.57
Reduction of smoke emissions	Ton	-	13.39

➤ Carbon emissions of investing and financing activities

Indicator		Unit	2022	2023	Change	Change trend	
Credit	Balance <sup>8</sup>	100 million yuan	3,146.36	3,525.01	12.03%	↑	
	Carbon emissions	10,000 tCO <sub>2</sub> e	657.42	695.36	5.77%	↑	
	Carbon emission intensity	tCO <sub>2</sub> e/million yuan	20.89	19.73	-5.57%	↓	
	In which, high-intensive industries	Balance <sup>9</sup>	100 million yuan	40.61	53.62	32.04%	↑
		Carbon emissions	10,000 tCO <sub>2</sub> e	88.95	120.27	35.21%	↑
		Carbon emission intensity	tCO <sub>2</sub> e/million yuan	219.05	224.28	0.27%	↑

## Section II Environment-related Governance Structure

Embracing the green development approach, the Bank actively response to environmental and climate challenges, and integrates green principles into the corporate governance framework. It continually enhances the organizational structure of green finance initiatives to reinforce their effectiveness and reliability.



Organizational structure for green finance in SHRCB

## I. Board of Directors

The Board of Directors of SHRCB shoulders the primary responsibility for green finance. It sets up the principles of conservation, low-carbon, environmental protection, and sustainable development, prioritizes the role of banking institutions in advancing the ecological civilization and facilitating comprehensive green transformation for economic and social development, and aims to create a sustainable development model that fosters mutual benefits with society. The Board of Directors is responsible for defining the green finance development strategy, approving the green finance objectives set by and reviewing the green finance reports submitted by the senior management. It also designates a dedicated committee to oversee green finance initiatives and assesses how well the Bank's green finance development strategy is executed.

The Strategy and Sustainability Committee at the board level is responsible for overseeing the Bank's overall progress of green finance and environmental protection initiatives. This committee strengthens research on sustainability-related issues, particularly focusing on green finance development and social responsibility/ESG strategic planning. It tracks and evaluates the progress of green finance development and social responsibility initiatives. In 2023, the Strategy and Sustainability Committee reviewed or received 9 proposals or reports related to green finance.

Session date	Green finance-related issues reviewed or presented
February 10, 2023	Reviewed the <i>Proposal on of the Strategy and Sustainability Committee's Annual Work Summary for the Year 2022 and the Work Plan for the Year 2023</i> .
April 27, 2023	Reviewed the <i>Proposal on the 2022 ESG and Social Responsibility Report of Shanghai Rural Commercial Bank Co., Ltd.</i> , the <i>Proposal on SHRCB's Self-assessment Report of 2020-2022 Strategy Execution</i> , the <i>Proposal on Making SHRCB's 2023-2-25 Development Strategy</i> , and the <i>Proposal on Developing SHRCB's Management Methods for Green Finance</i> , and others. Received the <i>Reporting on SHRCB's Green Finance Development in the Year 2022</i> .
May 19, 2023	Reviewed the <i>Proposal on SHRCB's 2022 Environmental Information Disclosure Report</i> .
August 23, 2023	Reviewed the <i>Proposal on Amending SHRCB's 2021-2025 Green Finance Development Strategy</i> . Received the <i>Reporting on the Assessment of the 1H2023 Strategy Execution</i> .

In its development strategy for 2023-2025, the Bank has stated the strategic objective of building a model bank in ESG. By creating an exemplary corporate governance practice for small and medium-sized banks, positioning itself as the most environmentally conscious bank in the Yangtze River Delta, and pioneering a Shanghai model of inclusive finance empowering social governance, SHRCB aims to continually fulfill its social responsibility. The Bank is committed to the belief that “green mountains and clear waters are invaluable assets”. Upholding the principles of

sustainable development, the Bank maintains a high growth rate in terms of the total volume of green financial services. Its green credit size has reached an advanced level among peers. The energy consumption across the Bank has decreased, making the Bank a pioneer in the transition to green and low-carbon practices.

## II. Senior Management

In accordance with decisions made by the Board of Directors, the senior management sets green finance objectives, establishes mechanisms and procedures, clarifies responsibilities and authorities, and conducts internal supervision, inspection, and performance evaluations. Annually, they report the progress of green finance development to the Board of Directors and submit and disclose relevant information on green finance to regulatory authorities or their designated agencies as required by laws or regulations.

The Bank has a comprehensive leadership and coordination mechanism for green finance initiatives. At the senior management level, a Green Finance Leadership Group has been formed, co-chaired by the Chairman of the Board and the President. The Leadership Group is responsible for coordinating and driving green finance initiatives across the Bank, including policy research, strategic planning, goal setting, and roadmap development. It also researches and makes decisions on important matters such as organizational structure, development direction, resource allocation, and incentive mechanisms. The leadership group's office is within the Risk Management Department.

The Green Finance Leadership Group has a Risk Management Working Group and a Business Development Working Group. The Risk Management Working Group, with its office in the Risk Management Department, and chaired by the leader of risk management. The working group is responsible for developing the risk management system for green finance, such as researching regulatory policies, making policies and standards, developing information infrastructure, and developing climate-risk management tools. The Business Development Working Group, with its office in the Corporate Finance Department, and chaired by the leader of business. The working group is responsible for coordinating the Bank's green banking such as developing the entire range of green products and driving the green banking.

In 2023, the Bank continued various green finance initiatives under the coordination of the Green Finance Leadership Group, further optimizing associated organizational structure and working mechanisms. At the beginning of 2023, the Bank

developed a comprehensive plan for green finance, which includes 60 specific initiatives across nine categories. A regular communication and feedback mechanism among departments to which members of various working groups belong has been created, with communication channels and workflows continually improved. This has contributed to a corporate culture where everyone values and promotes green finance.

### III. The Head Office

Giving full play to its strength as a group, the Bank clearly defines departmental responsibilities and enhances coordination between the front, middle, and back offices, as well as between headquarters and branches. This comprehensive and systematic approach drives the green finance initiatives forward.

The front office is primarily responsible for developing green finance products, identifying green clients, and promoting green banking. Front office departments include Corporate Finance, Investment Banking, Inclusive Finance, Retail Finance, Trade Finance, Financial Markets, and Asset Management. The Corporate Finance is responsible for coordinating the overall efforts of the Business Development Working Group, and daily communication and coordination. Other Business Units are responsible for developing and promoting green finance products within their own scope of responsibilities.

The middle office is primarily responsible for building the green finance management system for the Bank. Specifically, the Risk Management is tasked with improving the environmental and climate risk management system, creating green credit Classification Standard, leading green finance regulatory reporting, environmental information disclosure, and system management, as well as tracking and evaluating the progress of the green finance initiatives across the Bank. The Credit Granting Management is responsible for mainstreaming green credit granting requirements into the overall credit process system. The Credit Granting Approval is responsible for creating and implementing differentiated green credit approval mechanism. The Compliance and Internal Control is tasked with legal matters regarding green finance. The Asset and Liability Management oversees the bank-wide management of green asset structures, leads the issuance and fundraising management of green bonds, and provides differentiated pricing guidance for green finance business.

The back office is responsible for the bank-wide green operations, ESG information disclosure, talent development, assessment and incentives, branding, and promotion. It provides effective support and assurance for the development and management of green finance in the Bank.

#### IV. Operation Units

The Bank embodies the corporate mission of “inclusive finance delivers better life”. Leveraging the Green Finance Service Platform in the Yangtze River Delta, it strives to bolster support for local green enterprises. Through a distinctive green finance unit which focuses on green credit development, we aim to facilitate the capital operations of green banking. The unit leverages regional policies on the transformation of scientific and technological achievements to enhance support for key green projects such as clean energy, energy efficiency and environmental protection, and provide comprehensive financial services for green companies. As of the end of 2023, green loans at the unit accounted for over 35% of all loans, and the growth rate of green clients exceeded 65%.

## Section III Environment-related Policies

Guided by the concept that green mountains and lucid waters are invaluable assets, the Bank continuously improves the green finance management system and long-term mechanisms to form a comprehensive system covering management system, business development, risk management, and performance assessment and incentives.

### I. Policies Relating to Green Finance

Anchoring its green finance initiatives on the two pillars - *SHRCB 2021-2025 Green Finance Development Strategy* and *SHRCB's Work Plan for Carbon Peak and Carbon Neutrality for the 14th Five Year Plan Period*, the Bank integrates green finance into its overarching strategy. We specify strategic measures, action plans, and institutional mechanisms for green finance development, complemented by a suite of subsystems covering management, business expansion, risk control, and performance evaluation and incentives.

#### 1. Management system

With *SHRCB Management Methods for Green Finance*, *SHRCB Green Credit Strategy*, *SHRCB's Credit Allocation Policy for the Year 2023*, and *SHRCB Green Credit Classification Standard* in place, the Bank defines its green finance management system, division of responsibilities, support directions, and priority areas, shaping a new competitive edge in green finance. The *SHRCB Management Methods for Funds Raised via Green Bond Issuance* has been issued to standardize the management of funds raised through green bonds, ensuring that funds raised are specifically used to support green sectors.

No.	Policy name	Policy description
1	<i>SHRCB Management Methods for Green Finance</i>	This policy clearly defines relevant terms in green finance and outlines the organizational structure and division of responsibilities for green finance management within the Bank. It sets forth management requirements in areas such as policies and institutional capacity building, investing and financing process management, internal control management, and information disclosure.



No.	Policy name	Policy description
2	<i>SHRCB Green Credit Strategy</i>	This policy provides the fundamental principles guiding the development of green credit within the Bank, identifies key areas and industries for supporting green, low-carbon, and circular development, and states the basic requirements for classifying and identifying green credit.
3	<i>SHRCB's Credit Allocation Policy for the Year 2023</i>	In line with China's economic principles and regulatory requirements, this policy defines the credit priority among industries to propel the integrated development of the Yangtze River Delta and the Free Trade Zone, optimize customer structures, strengthen risk management, and achieve both stable growth and risk control. This policy emphasizes inclusive finance by supporting small and micro businesses, technological innovation, and green development, and proposes to adjust credit structures to promote high-quality development
4	<i>SHRCB Green Credit Classification Standard</i>	In this standard, green credit is classified into 9 first categories, 43 secondary categories, and 318 tertiary categories. Each tertiary category is accompanied by detailed explanatory notes. The classification and identification requirements for green banking from the People's Bank of China and the China Banking and Insurance Regulatory Commission are fully integrated into this standard which serves as the standard document for regulatory reporting and internal assessment of the classification and identification of green banking within the Bank.
5	<i>SHRCB Management Methods for Funds Raised via Green Bond Issuance</i>	This policy specifies the management requirements for funds raised through green bonds, outlining the Bank's procedures for assessing and selecting green industry projects, managing fundraising, conducting third-party evaluation and certification, and disclosing information. It is designed to ensure that funds raised through green bonds are exclusively to support green industries.

## 2. Business development

With a well-established system for the development of green finance business, the Bank has clearly defined the key directions for supporting green finance in various policy documents. In the *SHRCB's Guidelines on Green Finance Marketing*, the Bank sets the development objectives for green finance based on regulatory requirements and industry benchmarks, and outlines key strategic arrangements for green finance-related marketing and product systems. The Bank has issued documents including *Action Plan for Implementing mission Reduction Support Tools and Accelerating Asset, Marketing Guidelines for Emission Reduction Loans, SHRCB Management*



*Methods for Carbon Emission Allowance Pledge Credit (Trial), Management Methods for Pollutant Discharge Allowance Mortgage Loans, and SHRCB Management Methods for CCER Pledge Credit Granting.* to narrow the gap in policies and to diversify its business framework.

No.	Policy name	Policy description
1	<i>SHRCB Action Plan for Implementing Supporting Tools for Carbon Emission Reduction and Accelerating Assets Green Transformation</i>	According to related policies for <i>Supporting Tools for Carbon Emission Reduction</i> formulated by People's Bank of China, this Action Plan conducts specialized financial services from clean energy, energy conservation and environment protection, and carbon emission reduction technology.
2	<i>SHRCB Management Methods for Carbon Emission Allowance Pledge Credit (Trial)</i>	This policy specifies the definitions and management requirements related to credit granting with carbon emission allowance pledged, incorporates the credit granting with carbon emission allowance pledged into the unified management of corporate credit in the Bank, and introduces the Shanghai Emission Allowance (SHEA) pledge as a way to increase the line of credit.
3	<i>Management Methods for Pollution Right Mortgage Loans</i>	This policy specifies the definitions and management requirements related to pollution right mortgage, and sets forth the procedures for investigating the credit applicant's background and the discharge permits used as collateral.
4	<i>SHRCB Management Methods for CCER Pledge Credit Granting</i>	This policy specifies the definitions and management requirements related to CCER pledge credit, outlines the examination focus including the background check of the credit applicant (such as creditworthiness, and development prospects), and the ownership status of CCER, eligibility for pledge, and criteria for determining CCER value.

### 3. Risk management

The Bank places great importance on environmental risk management. We have clearly defined environmental risk management requirements in various business management systems with on-going efforts into improving our environmental risk management mechanisms.

#### ➤ Credit business

In the *Fixed Asset Loan Management Measures of SHRCB*, the Bank clearly states that projects must comply with national policies related to industry, land, and environmental protection, as well as the Bank's credit policies, and that whether the projects and loan applicants meet environmental protection requirements must be examined during pre-loan check and approval processes.

The *Working Capital Loan Management Measures of SHRCB* require that during the pre-loan check process, whether the borrower's production and business activities comply with national environmental protection policies and green finance requirements must be assessed; in the review and approval processes, the borrower's environmental and social risks must be examined, including an analysis of the nature and severity of these risks, as well as whether the borrower's production and business activities comply with national environmental protection policies and green finance requirements.

In the *Basic Operating Procedures for Pre-loan Check for Corporate Credit Business within SHRCB*, the Bank specifies pre-loan check must covers whether the borrower complies with national environmental protection policies and green credit requirements in areas such as energy consumption, pollutant discharges, chemical and waste management, and safety and health management, and whether the borrower presents any potential major environmental and social risks.

In the *Basic Operating Procedures for Review and Approval Credit Business within SHRCB*, the Bank requires that reviewers/approvers must be clear whether the borrower complies with national requirements in green finance in terms of energy consumption, pollutant discharges, chemical and waste management, and safety and health management, and whether the borrower presents any potential major environmental and social risks.

➤ Financial market business

The Bank's *Internal Rating and Access Criteria for Enterprise Credit Bond Issuers* incorporates Environmental, Social, and Governance (ESG) related access requirements, defines access thresholds for credit bond issuers from the dimensions of environment, society, and governance, and requires continuous monitoring and evaluation.

#### 4. Assessments and incentives

The Bank continuously enhances assessments and incentives for green finance. It provides support for green finance through favorable conditions for risk assessments and differentiated performance assessments, to boost the enthusiasm for green marketing across the entire organization.

➤ Expanding the favorable conditions for risk assessment in green finance

In the *SHRCB's Credit Allocation Policy for the Year 2023*, the Bank has further intensified its support for green credit by outlining clear green credit strategies, and

expanding the scope of risk-weighted assets (RWA) favorable conditions from corporate green credit to encompass all green credit initiatives.

➤ Increasing green finance assessment incentives

In 2023, green finance-related indicators were incorporated in to the evaluation of senior management, thereby reinforcing top-down accountability for green finance management. Green finance-related performance indicators have been added to branch performance evaluations. Support for credit to all green industries are ensured through unified deployment across the organization. This encourages each branch to provide specialized financial services for green industry projects aimed at environmental improvement, climate change adaptation, and efficient resource utilization.

## II. Actions for Regional Green Development

The Bank adheres to national environmental laws and regulations, and effectively embody national strategic deployments and industry policy guidance. It closely aligns with the requirements of Shanghai's low-carbon development and green finance policies, actively participates in the effort into developing Shanghai into a green and low-carbon city and contributes to the region's high-quality development.

### 1. Complying with regulatory requirements

The Bank implements various green finance policies and regulations, such as the *Guidelines for Green Finance in the Banking and Insurance Sectors*, *Green Bond Endorsed Projects Catalogue (2021 Edition)*, the *Green Finance Evaluation Scheme for Banking Financial Institutions*, and the *Action Plan for Promoting Green Finance Development and Serving the Peak Carbon and Carbon Neutrality Strategy of the Banking and Insurance Sectors in Shanghai during the 14th Five-Year Plan Period*. It has integrated green finance into the new three-year strategy and formulated the *Bank Green Finance Management Measures of SHRCB*. Additionally, SHRCB has enhanced institutional mechanisms, clarified the scope of green finance business, bolstered support for green industries, improved environment risk management capabilities, and comprehensively elevated the quality and effectiveness of green finance.

### 2. Serving the “dual carbon” goals of Shanghai

In line with local strategies such as *Opinions on Accelerating the Development of*

*Shanghai to a Green Finance Hub to Serve the Carbon Peak and Carbon Neutrality Goals and Action Plan for Targeting New Tracks to Promote the Green and Low-Carbon Industries in Shanghai*, the Bank has clarified the direction of green finance development. It continuously innovates products in areas such as climate finance and carbon finance with pilot projects to lead the way. The Bank spares no effort in supporting major projects at both the municipal and district levels in Shanghai and accelerating the significant industrial projects, major infrastructure projects, and major livelihood projects. The Bank actively liaisons with the government offices at the municipal and district levels in Shanghai, and supports the effort via a list-based grid management. It sets up special project teams and opens up expedited approval channels, to support major project construction with greater speed and intensity. In 2023, Shanghai officially arranged 191 major projects with a total investment of 1.7 trillion yuan, covering five areas: science and technology industries, social livelihood, ecological civilization, urban infrastructure, and urban and rural integration, and rural revitalization. The Bank was actively involved in 30 projects from all of the five areas, as a part of its active effort into local economy regarding low-carbon and green transformation.

### III. Compliance with International Conventions and Initiatives

The Bank actively responds to international and domestic initiatives in green finance, including the United Nations Sustainable Development Goals (SDGs). In October 2022, it earned the approval from the United Nations Environment Programme to become first bank in Shanghai to sign the Principles for Responsible Banking (PRB). In 2023, the Bank released the 2022 Environmental, Social, and Corporate Governance (ESG) Report, along with the first report on the Principles for Responsible Banking (PRB). Aligned with the six Principles for Responsible Banking as required by the United Nations Environment Programme, the Bank will embody relevant requirements comprehensively by setting targets for mitigating climate risks, fulfilling its obligations as a responsible bank such as regular self-assessments and further enhance its social image. This will solidify its commitment to environmental sustainability.

As one of the 36 Chinese banking institutions that signed the *Joint Declaration on Support for Biodiversity Conservation by Banking and Financial institutions*, the Bank is actively engaged in effort for the Post-2020 Global Biodiversity Framework. It continuously enhances the biodiversity conservation strategy and fully harnesses the

role of finance in promoting eco-friendly, sustainable, green, and inclusive development.

### **Case study: Contributing to biodiversity conservation**

With a firm commitment to biodiversity conservation, the Bank is mindful of the responsibility and role of financial institutions. We continuously explore and innovate eco-friendly financial services, to help with the harmony between humans and nature.

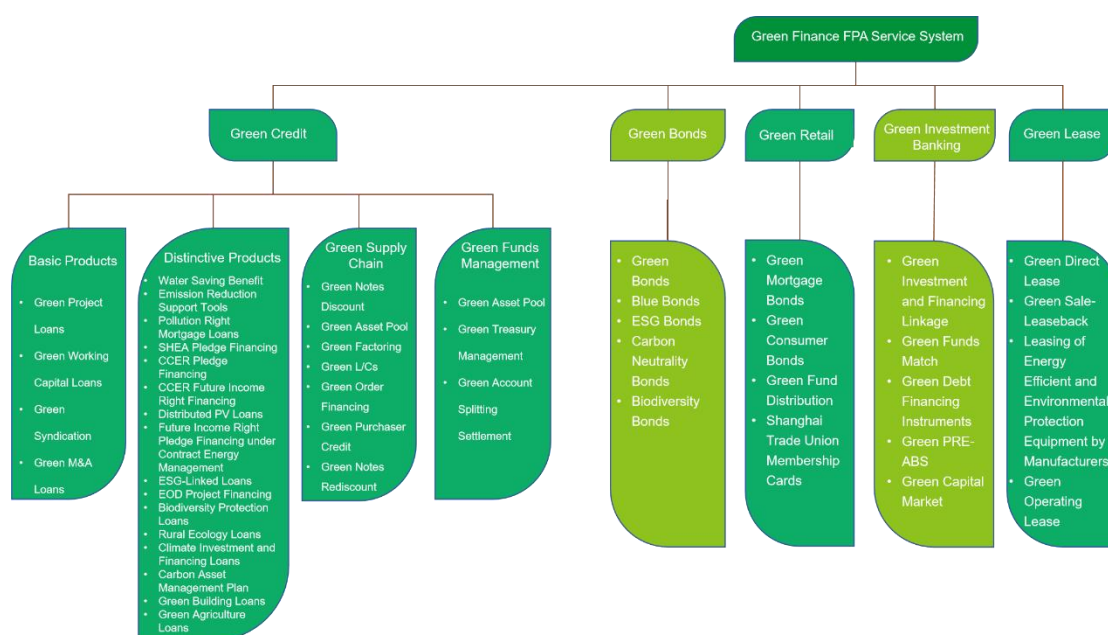
Located in Jinshan District, Shanghai, the Langxia Countryside Park comprises farmland, woods, green areas, water bodies, wetlands, and natural villages, covering a total area of over 300,000 square meters. The administrator planned to renovate the park's vegetation maintenance, improve facilities, and enhance the ecological environment. However, money shortfall resulted in slow progress of the project. The Bank promptly reached out to the client to provide a tailored fixed asset loan totaling 15 million yuan over ten years. This loan supports the space renovation of existing farmland, seedlings, and conservation forests, and improvement of the natural water purification system. The project would facilitate the endogenous recycling of water resources and nutrients, and offer a green space for the habitation and reproduction of wildlife.

The Bank also invested in Bond Connect, a special green bond under the Yangtze River Basin Ecosystem Protection and Restoration initiative. These bonds are issued over three years, with the funds raised dedicated to water pollution control, given the systemic and holistic ecological aspects of the Yangtze River Basin. Additionally, the Bank provided financial support for ecological protection and wetland restoration projects through investments and loans.

## Section IV. Product and Service

# Innovation relating to Environment

The green finance FPA service system at SHRCB centered around green credit, green bonds, green retail, green investment banking, and green leasing, offers clients comprehensive financial solutions in both domestic and foreign currencies, on and off the balance sheet. The Bank is dedicated to creating a “one-stop” green finance service platform.



SHRCB's green finance FPA service system

### I. Corporate and Inclusive Finance Line of Business

The Bank closely follows national strategies by continuously deepening innovation in green financial products and services. We assist enterprises in monetizing environment-linked equity assets by incorporating carbon emission allowances, pollution rights, energy usage rights, water rights, and China Certified Emission Reductions (CCER) into our credit approval scope. This enhances enterprises' credit guarantee capabilities and broadens their financing channels, and enables us to offer comprehensive and closed-loop services in environment-linked equity financing.



### Case study: The first Water Saving Benefit loan for water network renovation in Shanghai

In April, 2023, the Bank and Shanghai Water Authority signed a special cooperation agreement named Water Saving Benefit to facilitate water conservation. Additionally, it signed an agreement with Shanghai Pudong Water Utilities (Group) Co., Ltd., intending to provide credit support for the comprehensive renovation of water plants, the reconstruction of water supply and drainage pipelines, and the improvement of sewage treatment in the southern part of Pudong New Area. This transaction resulted in the first Water Saving Benefit loan granted for water network renovation. According to estimates, upon the renovation, the leakage rate of pipelines in Nanhui area is expected to significantly decrease; daily water savings will reach at least 78,000 cubic meters, with annual water savings totaling nearly 29 million cubic meters, equivalent to the storage capacity of two Dishui Lakes.



The Bank and Shanghai Water Authority was signing the special Water Saving Benefit agreement.

### Case study: Successful credit granting with CCER pledged

In August, 2023, the Bank successfully concluded a credit granting with CCER pledged, marking the Bank's closed-loop services in carbon finance. The client primarily produces composite nonwoven fabrics as fundamental materials for medical products. In 2022, the client was included in the carbon emission management list by

the Shanghai Bureau of Ecology and Environment. In following the national development strategy, the Bank innovates carbon asset financing tools and financial services by incorporating CCER into the scope of credit recognition. This effectively revitalizes corporate assets, strengthens credit guarantee capabilities, comprehensively expands financing channels, and supports the development of the green economy. Building on the success of facilitating the first-ever Shanghai Emission Allowance (SHEA) pledge credit transaction in China for the client last year, the Bank has once again recommended a credit enhancement scheme with CCER pledge to the client who has well-received the scheme. This CEER pledge for increasing line of credit increased the total line of credit of client by about 60%, and reduced the loan interest rate by 20 bps. This measure indeed has created dual benefits of environmental protection and economic growth.



The Bank's CCER pledge credit to effectively mobilize the client's carbon assets

### **Case study: Pollution right loan contributed to enterprise transformation**

Company A is a national high-tech enterprise specializing in the production of electrostatic flocking products. The Bank incorporated the idle emission allowances of this company into the financial service plan for the client, providing the client with pollution right mortgage loans. This effectively enhanced this company's creditworthiness and increased its line of credit. By combining RMB loans, bill financing, and foreign currency trade financing, the Bank provided the company with



a comprehensive credit support of 35 million yuan to address its financing challenge. With the funding, the green plant construction and low-carbon production for the client were financially secured. This assistance enabled the client to reduce pollution while expanding clean production, laying a foundation for sustainable operations.



The pollution right mortgage loan for a producer of electrostatic flocking products

### **Case: Successful close of a project supported by the PBOC's emission reduction support tools**

Company B specialized in PV power generation, planned to construct a 300MW Fishery-PV Integration power plant project. The project employing the integrated mode where the space above water is used for solar power generation and the space under water is for fish farming, to make the most of resources. The Bank swiftly collaborated with industry experts to conduct on-site investigations and actively communicated with this company regarding financing issues. For the first phase of the project, the Bank successfully secured the entire financing gap of over 200 million yuan for this company. Additionally, it voluntarily reduced the loan interest rate to decrease the financial expenditure burden on this company. In 2023, the project was included into the scope of emission reduction support tools by the People's Bank of China. According to calculations, the loan provided by the Bank is expected to reduce

carbon emissions by 50,000 tons annually. Additionally, the coverage of water surfaces by photovoltaic panels would decrease freshwater evaporation and prevent algae proliferation by blocking direct sunlight, significantly enhancing the results of aquaculture. This integration of green finance with rural revitalization will be profound.



The 300MW Fishery-PV Integration power plant project by a PV power generation company

### **Case study: Distributed PV Loan helps with energy structure adjustment**

Taking Distributed PV Loan as a breakthrough point, the Bank has been increasing the green transformation of asset structure, and contributing to achieving the “dual carbon” goals. According to the Bank’s *Special Service Plan for Distributed PV Loans*, energy service companies and energy investment funds are targeted clients. Following obtaining sufficient credit limits and approval authorities, operation units within the Bank can independently determine the withdrawal amounts for project companies meeting criteria, a way to enhance credit efficiency and market competitiveness. In the first quarter of 2023, the Bank secured its first Distributed PV Loan transaction. In 2019, the Bank entered a partnership with PF New Energy Group. Under the partnership, the Bank innovatively adopted the Distributed PV Loan reporting and approval model which facilitates rapid reporting, expedited approval, and swift disbursement for new projects, significantly enhancing the operational

efficiency of the Group's projects. As of the end of 2023, the Group had collaborated with the Bank on over thirty projects located across Jiangsu, Zhejiang, Shanghai, and Anhui, with a total grid-connected capacity exceeding 110 MW. The annual electricity generated in 2022 was about 100,000 MWh, with over 80,000 tons of carbon dioxide emission reduced, and over 30,000 tons of coals saved.

#### **Case study: Close of a sustainability-linked green syndicated loan**

In September, 2023, the Bank and a leasing company signed an agreement for a 3 billion yuan ESG-linked green syndicated loan. The funds from this loan will be entirely allocated to clean energy, energy-efficiency, and emission reduction projects. The loan has been evaluated by a third-party professional rating agency, revealing its compliance with the basic principles of sustainable development. This stood as the largest RMB-denominated green syndicated loan in the market for 2023. The Bank served as the co-lead arranger, showcasing its strong endorsement of this company's ESG performance and future growth prospects. It was as a tangible demonstration of the Bank's dedication to sustainable investment practices.

#### **Case study: Close of a cross-border RMB sustainability-linked loan**

In 2023, the Bank successfully closed the 2023 ARCF cross-border RMB sustainability-linked loan for an energy group. This syndicated loan is supported by 30 banks from China and abroad. The Bank offered a loan of 200 million yuan as one of Chinese lenders. This syndicated loan is linked to sustainability indicators like the GHG emission reduction, and installed capacity of renewable energy. The mechanism of floating financing costs was employed to motivate the client to reach these sustainability indicators in relevant areas, a way to boost the green and sustainable development and elevate the RMB internationalization,

## **II. Retail Finance Line of Business**

In retail finance, the Bank focuses on promoting green credit products and services, such as green personal loans. Regarding green personal business loans, the Bank integrates green finance with inclusive finance, and connect with personal business loan platforms, directing loans towards green sectors such as energy conservation, environmental protection, clean energy, and new materials. Regarding green personal consumption loans, through public-private cooperation, the Bank combines loans for green building projects and new energy vehicle producers with

personal green mortgage loans and new energy vehicle loans to provide financial products and services for individual green consumption. The Bank also makes significant efforts in the area of green bank cards. It encourages individual customers to adopt a green lifestyle through carbon points initiatives, and promote the distribution of publicly offered green funds to support the broader societal transition to a green and low-carbon economy.

### **Case study: Supporting the green and low-carbon development in the transport sector**

In recent years, a motor company has been making significant strides in the new energy vehicle sector, with steadily increasing sales. From January to December 2023, sales of new energy vehicles from this motor company exceeded 1.123 million units, marking a year-on-year growth of 39%. Since 2019, the Bank has been collaborating with this motor company's finance company to support China's green development philosophy and sustainable development strategy, by facilitating new energy vehicle loans, which supports individual consumers in purchasing new energy vehicles for personal use. As of the end of December 2023, the balance of new energy vehicle loans resulting from the Bank's collaboration with this motor company's finance company reached 27.7218 million yuan, effectively contributing to pollution reduction and emissions mitigation.

### **Case study: Introducing green bank cards to lead a green life**

In collaboration with the Shanghai Federation of Trade Unions, the Bank has issued co-branded debit cards and credit cards to union members across the city. Additionally, through promotional activities that attracted about 40,000 participants, such as union cardholders who meet certain asset thresholds can enter a draw to win a weekly or monthly pass for Hellobike, or receive cash subsidies to encourage the use of green transportation options such as the subway, buses, ferries, and trams, customers are encouraged to adopt a low-carbon lifestyle. This event attracted over 40,000 participations from customers.

What is more, the Bank has developed the green Xinsu Card, its first fully digital card which is supported by digital technology throughout its entire lifecycle, and enables "five real-time" capabilities: real-time application, real-time approval, real-time activation, real-time binding, and real-time consumption. Coupled with a paperless application process, this card aligns with green and environmental principles, and enhances both card issuance efficiency and the user experience.



### Case study: Low-carbon Park Sightseeing activity

In 2023, as low-carbon travels gained popularity on social media, the Bank explored new green consumption scenarios with a focus on enhancing users' experiences of a better life. It launched the Low-Carbon Park Sightseeing themed event, featuring the popular form and game-style content to support the development of the green and low-carbon economy, and to guide the monetization of low-carbon behaviors.



Low-carbon Park Sightseeing activity

### Case study: Active distribution of publicly offered green funds

In 2023, the Bank sold 18 publicly offered funds associated with ESG, low carbon, new energy, and environmental protection on behalf of fund managers, with a total sales of 10,719,500 yuan.

No.	Fund name	Sales (10,000 yuan)
1	Huitianfu Environmental Protection Industry stock	286.91
2	Jiashi New Energy Materials	215.78

3	Jiashi Environmental Protection and Low-carbon stock	108.91
4	Jingshun Great Wall New Energy stock	101.81
5	Shenwan Lingxin New Energy Vehicles	81.41
6	Huitianfu New Energy Vehicles	72.99
7	HSBC Jinxin Low-Carbon Pioneer stock	69.77
8	Zhonghai New Energy	55.16
9	E-fund Environmental Protection Theme	38.60
10	AXA SPDB Environmental Protection New Energy	11.82
11	Hua'an New Energy Vehicle ETF Connect	8.50
12	Huitianfu ESG Sustainable Growth	7.17
13	Jingshun Great Wall Environmental Protection Advantage stock	4.55
14	Jingshun Low Carbon Technology	3.00
15	Shenwan Zhongzheng Environmental Protection Industry Index	2.17
16	GDB Environmental Protection Index	1.87
17	Jiashi ESG Sustainability Investment Mix	1.37
18	Ping'an Zhongzheng New Energy Vehicle ETF Promote Connect	0.15
	Total	1,071.95

### III. Financial Market Line of Business

To serve the real economy, the Bank actively engages in green finance investing and financing activities. It provides comprehensive green financial services to the market, supporting the green and low-carbon transformation of the real economy and contributing to achieving carbon peaking and carbon neutrality goals.

#### **Case study: Successful issuing the Bank's first green bond**

In expanding green financing channels, the Bank successfully issued its inaugural green bond in July 2023. The bond is abbreviated as 23 SHRCB Green Bond 01 with the bond code 2321019. The bond was issued for a size of 3 billion yuan, with a coupon rate of 2.67%, and a maturity period of 3 years. The funds raised will be exclusively allocated, subject to applicable laws and regulatory approvals, to green industrial projects as defined in the *Green Bond Endorsed Projects Catalogue (2021 Edition)*. This green bond marks a significant initiative for the Bank in broadening green financing channels and guiding special support from social capital

towards green development.

In strict adherence to the *Green Bond Endorsed Projects Catalogue (2021 Edition)* jointly released by the People’s Bank of China and the China Securities Regulatory Commission, the Bank will screen and engage to allocate funds to green projects that meet the specified criteria. In this regard, the Bank launched the first batch of green bond projects in 2023. As of the end of 2023, the Bank had utilized funds raised from green finance bonds to finance 30 new green projects, with a total investment of 1.876 billion yuan. These projects are expected to achieve annual savings of 3.3933 million tons of water, 31.20 tons of coal, and reduce carbon dioxide emissions by 71.85 tons, nitrogen oxides by 0.014 tons, sulfur dioxide by 0.01 tons, and particulate matter by 0.002 tons.

SHRCB 上海农商银行

上海农村商业银行股份有限公司  
2023年绿色金融债券  
(第一期)

**成功发行**

发行规模：	人民币30亿元
债券期限：	3年期
信用评级：	AAA/AAA
票面利率：	2.67%
认购倍数：	5.20倍
簿记日期：	2023年7月13日

发行人  
SHRCB 上海农商银行

牵头主承销商、簿记管理人  
中债资信  
中债资信

联席主承销商  
ICBC 中国工商银行

### SHRCB’s green bond

The Bank is steadfast in following national and regional strategic initiatives by increasing the scale of on-balance sheet green bond investments, and taking an active role in the construction of the Yangtze River Delta region, promoting green transformation and development, and driving investment transactions towards green

and tangible outcomes.

### **Case study: Contributing to the ladder-style use of energy from the main streams of Changjiang River, Jiangling River, and Wu River**

In 2023, the Bank was involved in the investment of the 11th tranche of green medium-term notes issued by Huaneng Lancang River Hydropower Inc. (Bond abbreviated as 23 Huaneng Hydro GN011). The funds raised from this issuance are entirely dedicated to nine hydropower stations under the issuer. Compared to equivalent thermal power generation projects, these projects are expected to annually replace 23.0837 million tons of standard coal equivalent, resulting in a reduction of 38.9639 million tons of CO<sub>2</sub> emissions, 7,732.86 tons of SO<sub>2</sub> emissions, 11,637.58 tons of NO<sub>x</sub> emissions, and 1,684.39 tons of particulate matter emissions. As of the end of 2023, the face value of this green bond held by the Bank reached 150 million yuan. This marks that the Bank leverages its financial strength to promote the large-scale development of hydroelectric power and contribute to the ladder-style utilization of energy from the main streams of Changjiang River, Jiangling River, and Wu River.

### **Case study: Contributing to improving the clean energy industry chain in the Yangtze River Delta region**

In 2023, the Bank was involved in the investment of the 10th tranche of green medium-term notes issued by Wuxi Industry Development Group Co., Ltd. (Bond abbreviated as 23 Wuxi Industry GN010). The funds raised from this issuance are entirely dedicated to two PV power generation equipment manufacturing projects. Based on the PV panel production capacity resulted from the funds raised, it is estimated that the subsequent photovoltaic power generation projects can replace 153,400 tons of standard coal equivalent each year, resulting in a reduction of 379,300 tons of CO<sub>2</sub> emissions, 42.36 tons of SO<sub>2</sub> emissions, 67.87 tons of NO<sub>x</sub> emissions, and 8.68 tons of particulate matter emissions. As of the end of 2023, the Bank held a face value of 20 million yuan of this green bond, contributing to the clean energy industry chain in the Yangtze River Delta region and facilitating the region's transition to green development.

### **Case study: Launching YRD green thematic bond basket**

In December 2023, the Bank successfully launched the SHRCB Yangtze River Delta (YRD) Green Commercial Bond Basket (Basket Code: BBX034001) in the interbank market. On the first day of its launch, transactions were made with several



urban commercial banks, securities companies, and other market institutions, making the Bank one of the first institutions in the market to create a bond basket. This bond basket comprises four green bonds from commercial banks and with maturities of up to three years. The bond issuers are primarily state-owned and urban commercial banks in the Yangtze River Delta, known for their high investor recognition and excellent credit quality. This basket enables investors to achieve diversified allocations of green bonds, aligning with their goals of participating in green and low-carbon economic development in the Yangtze River Delta region.

### **Case study: Underwriting the Bond Connect issued by China Development Bank**

In 2023, the Bank was as a member of the lead underwriter syndicate for China Development Bank's issuance of its first series Bond Connect (a green bond) in 2023 (23 CDB Green Bond 01 SHCH) and China Development Bank's issuance of its second green bond in 2023 (23 CDB Green Bond 02 SHCH). These bonds were successfully offered through the Shanghai Clearing House to global investors and received subscriptions from a wide range of domestic and international investors. The proceeds from the 23 CDB Green Bond 01 SHCH which focuses on Yangtze River Protection and Green Development will be basically used for green projects along the Yangtze River. These projects cover urban rail transit systems, wastewater treatment and pipelines, water ecological management, rural living environment improvement, and river and wetland protection and restoration. The proceeds from the 23 CDB Green Bond 02 SHCH are proposed for projects that comply with the *Guidance on Taxonomy of Climate Investment and Financing Projects* issued by the Climate Investment and Financing Professional Committee of the Chinese Society for Environmental Sciences. This marks the first attempt to use green bonds in the field of climate investment and financing.

## **IV. Investment Banking Line of Business**

The Bank actively guides capital towards green industries by underwriting green bonds and carbon-neutral bonds to support green development, facilitating financing for green projects to promote green transition and development, and empower the real economy.

### **Case study: Successful underwriting of the first Carbon Neutrality Bond/Rural Revitalization green medium-term notes in Shanghai**

In 2023, a leasing company successfully issued its first tranche Green Medium-Term Notes (Carbon Neutrality Bonds, Rural Revitalization) in the year 2023 in the interbank market. The Bank acted as a co-lead underwriter for this issuance which marked Shanghai's first medium-term green bonds featuring Carbon Neutrality Bond/Rural Revitalization. Funds raised through this issuance are intended to be used for finance lease projects in the renewable energy sector, specifically wind power generation projects. The electricity generated from these wind power projects will be integrated into the North China, East China, and Northwest Power Grids, and expected to see significant outcomes in energy conservation and emission reduction. In addition, a portion of the funds raised would be allocated to support rural development, which holds significant importance for implementing clean energy projects in rural areas, increasing the construction of rural power grids, and comprehensively enhancing the level of rural electricity security. This initiative not only helps to consolidate the achievements in poverty alleviation but also promotes rural economic development.

## **V. Asset Management Line of Business**

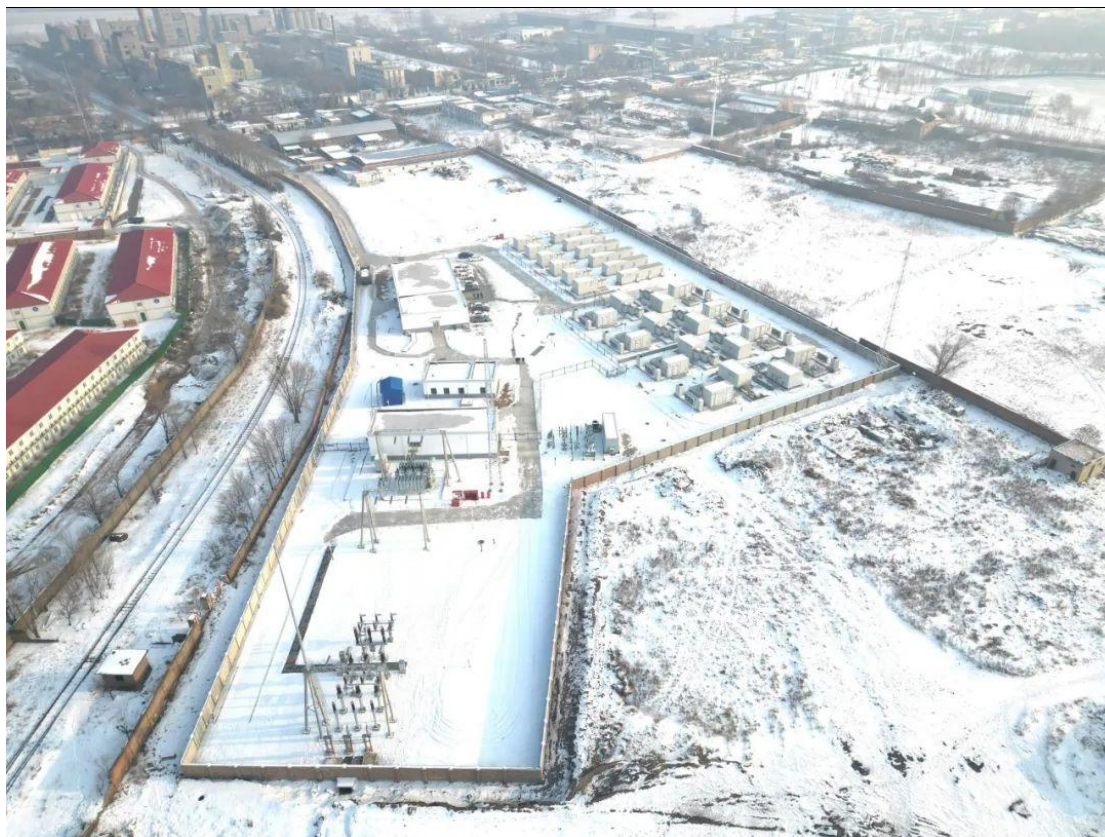
Guided by the principles of “finance for good” and “green finance”, the Bank strives to become the one of the “greenest banks” in the Yangtze River Delta region. In 2023, the Bank explored high-quality issuers of green bonds and increased investment in green-themed bonds. By the end of 2023, the balance of green bond investments in its asset management business line reached 2.139 billion yuan, this marked its active role in supporting and contributing to the country's strategic goal of carbon peaking and carbon neutrality. What is more, the Bank emphasizes the empowerment of asset management quality and efficiency through financial technologies. It further refined the internal fintech system and enabled the electronic mode for the entire life cycle of wealth management business. This could reduce operational costs in investment operations, risk control, compliance management, and operational accounting, thereby enhancing the transmission of green and low-carbon values.

## VI. Finance Lease Line of Business

Yangtze United Financial Leasing, one of the Bank's subsidiaries, actively integrates into the group's business strategy by further focusing on green transportation, green manufacturing, green energy, and green environmental protection. Through business synergy and leveraging the strengths of both banking and leasing services, it comprehensively meets the financing needs of customers for new projects, continuously creates momentum for the development of green leasing. In 2023, with its resources integrated, Yangtze United Financial Leasing set the Green Energy Business Department which focuses on developing business opportunities in areas such as new energy, the green upgrade of traditional energy sources, and green environmental protection, and supports the sustainable and high-quality development of the energy industry.

### **Case study: Successful execution of the first flywheel energy storage-based finance lease**

In 2023, Yangtze United Financial Leasing closed its first finance lease transaction in the flywheel energy storage sector. This contributes to the low-carbon transformation of the energy structure and provides support for sustainable and stable green electricity supply in urban areas. Yangtze United Financial Leasing conducted risk assessments around both construction and operational phases. It tailored the revenue model for standalone frequency regulation power plants in accordance with local policies, and analyzed the feasibility of the project by considering the market outlook for flywheel energy storage, an emerging energy technology grounded in precision manufacturing. Adopting a "direct lease + tax reduction" model complemented by long project cycle, Yangtze United Financial Leasing has created a flexible repayment structure. This approach aids startups in swiftly commencing new projects, aligning with their long-term strategic plans, and empowering them for steady operations. Close collaboration enables the project to alleviate the cost pressures on power stations and contributes to a novel electricity system primarily based on renewable energy. It is adaptable to multiple application scenarios, stimulates downstream demand and achieves a win-win situation for both economic and environmental benefits.



Xiehe new energy storage plant

### **Case study: The first participation in a project for replacing batteries for electric heavy-duty trucks**

In 2023, Yangtze United Financial Leasing made its first entry into battery replacing project for electric heavy-duty trucks by engaging with the client from its inception and offering comprehensive financial service solutions. In releasing the project, Yangtze United Financial Leasing considered the growth potential of electric heavy-duty trucks and the market demand for clean energy and balanced risk and return. It then provided tailored and efficient financing lease solutions for the client. Specifically, battery leaseback funds are used to propel the sustainable development of green electric transportation through initiatives such as battery leasing and separation of vehicle and battery. This enables a dual green approach in both leased assets and fund utilization, and empowers the green transformation of the transportation industry. The rapid release of this project not only revitalizes the client's existing equipment assets and enhances its technological leadership but also assists the client in exploring downstream markets and rapidly increase its market share in emerging industries. In 2023, at the first Yangtze River Delta Finance Lease Development Conference held in Nanjing, this project from Yangtze United Financial



Leasing was selected into Outstanding Cases of Yangtze River Delta Finance Lease.

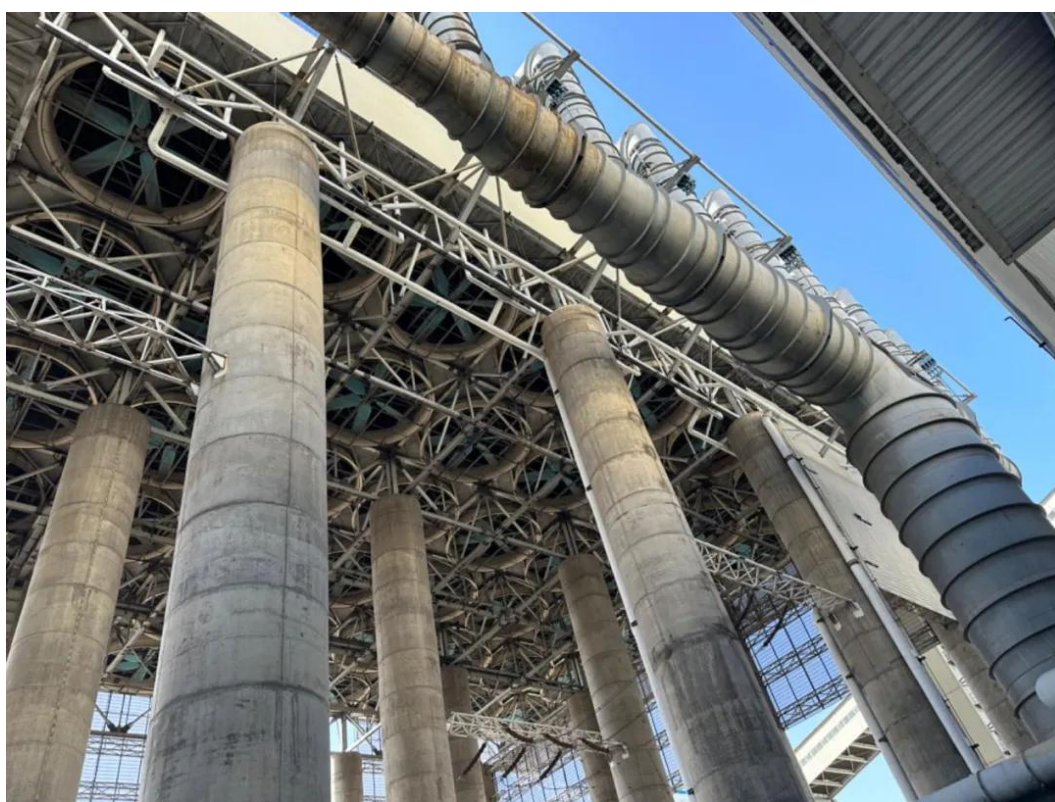


Outstanding Cases of Yangtze River Delta Finance Lease

### Case study: Contributing to aluminum industry upgrade for using green electricity

In 2023, Yangtze United Financial Leasing successfully launched the project finance for an aluminum manufacturer in Inner Mongolia. It provided a targeted and efficient finance lease solution to assist the client in transitioning from coal-powered aluminum to green electricity-powered aluminum. This endeavor demonstrates green finance empowering social governance. As one of the leading companies in the electrolytic aluminum industry in Inner Mongolia known as the Northern Aluminum Capital, the client takes the transformation of energy and industrial structure as its focal point. It has become one of the first domestic electrolytic aluminum companies to obtain green electricity certification. According to the green electricity-powered aluminum limit calculated under *Implementation Rules for Evaluation and Trading of Green Electricity Powered Aluminum*, it is projected that by the end of the 14th Five-

Year Plan period, the client's new energy power consumption will reach 5.352 billion kWh. This would enable an annual production output of 250,000 tons of green electricity powered-aluminum, and leads to a reduction of nearly 1.1 million tons of carbon dioxide emissions per year. Leveraging the power of finance leasing, Yangtze United Financial Leasing supports energy conservation and emission reduction in the electrolytic aluminum industry, revitalizes existing equipment assets, and enhances aluminum recycling rates. In line with the client's long-term strategic development needs, it also improves efficiency in downstream aluminum processing and long-distance transportation of aluminum ingots, thereby extending the "coal-electricity-grid-aluminum+" industry chain to drive high-quality regional economic development.



Green electricity-powered aluminum project for an aluminum manufacture in Inner Mongolia

# Section V Environment Risk Management Process

The Bank continuously refines environmental risk and opportunity management. In this regard, it optimizes processes for identifying, assessing, and addressing climate-related risks, integrates environmental and social risk reviews and assessments throughout the credit process management, enhance its ESG risk management access and alert system for debentures. This ongoing effort strengthens its environmental risk management capabilities.

## I. Identification and Assessment

The Bank attaches high importance to the environmental, social, and governance risks associated with clients or projects. Throughout the credit granting process, the Bank incorporates environmental risk identification and assessment requirements into the entire management process. This requires paying attention to the environmental risks of clients or projects during pre-loan access, loan approval, and post-loan management stages. The Bank imposes strict credit or investment restrictions on clients with substandard environmental, social, and governance performance. It does not provide credit or investment to clients or projects that violate China's industrial, environmental, and safety policies, the Bank's credit policies, or those affected by environmental and social incidents that impact their ongoing operations. It directs credit funds towards green and environmentally friendly sectors, and increases support for the green economy, low-carbon economy, and circular economy, thereby contributing to a green and low-carbon society.

## II. Management and Control

Environmental risk management requirements are incorporated into multiple stages, including pre-loan, during the loan period, and post-loan. Relevant risk controls are enhanced throughout the entire process including pre-loan access, loan approval and post-loan management, aiming to enhance the quality and effectiveness of environmental risk management.



## 1. Environmental risk management for credit clients

### (1) Pre-loan access

- Industry classification: Account managers check whether the borrower's project complies with the country's industrial, land, and environmental policies, whether the borrower's production and business activities are within the "high resource consuming, high pollution, and excessive overcapacity" or in industries with outdated capacity to be eliminated, and whether the project adheres to our Bank's green credit policy.
- Due diligence check: Account managers are required to complete the Environmental and Social Risk Rating Form where the environmental and social risk levels of clients and projects are assessed together with reasons for the assessment results. If the project has an environmental impact, a thorough investigation of the current situation must be conducted, and valid and complete environmental protection approval from the relevant authorities must be obtained.

### (2) Loan approval

- Risk review: Review and approval personnels are required to conduct thorough environmental and social risk assessments of clients. This includes analyzing whether the borrower/project meets national green finance requirements in terms of energy consumption, pollutant emissions, chemical and waste management, and safety and health management, identifying any potential major environmental and social risks, examining whether the borrower, guarantor, and business are involved in money laundering activities and assessing the borrower's tax compliance.
- Expedited approval channel: The Bank has a reviewer liaison mechanism under which green specialists are appointed in each review department. The approval approach featuring specialized liaison and fast handling is applied to green credit granting to ensure green credit activities receives the highest priority in resource allocation and timely business response.
- Contract management: Clauses related to environmental and social risk management are added to credit contracts.

### (3) Post-loan management

Account managers are required to conduct routine checks on the credit applicant (guarantor), examining whether they have been affected by major natural disasters or accidents; assess whether the credit applicant complies with national environmental policies regarding energy consumption, pollutant emissions, chemical and waste

management, safety, and health management, and whether there are potential major environmental and social risks; ensure the procedures for determining the green nature of the loan are properly performed and supported by relevant materials; and continuously monitor changes in the green determination of the applicant. The Bank also maintains risk alerts and post-loan monitoring on clients with significant environmental and social risks in its credit risk alert system.

## **2. ESG risk management for credit bonds**

The Bank introduces publicly sourced authoritative ESG ratings and alert data about debenture issuers into its evaluation of debenture issuers across environmental, social corporate governance dimensions. This enables the Bank to identify and mitigate environmental and social risks associated with issuers while also identifying high-quality clients with sustainable development potential. Against the ESG ratings of credit bond issuers, the Bank has set access thresholds to mitigate ESG investment risks.

The Bank conducts assessments of credit bond issuers from the dimensions of environment, social, and corporate governance in its ESG rating system. Regarding the environmental dimension, the Bank places emphasis on assessing the issuer's awareness and investment in environmental protection, as well as whether there are conflicts of interest between the issuer's development and environmental protection efforts. Regarding the social dimension, the Bank focuses on assessing whether there are conflicts of interest between the issuer's development and the needs of key social groups such as customers, employees, and others stakeholders. Regarding the corporate governance dimension, the Bank emphasizes assessing whether the issuer's daily management is of high quality and efficient, with a focus on incentive and oversight mechanisms, management capabilities, and the potential impact of external regulatory environments on corporate governance.

According to this assessment system, a higher score indicates better ESG performance of the bond issuer. Following the assessment, the Bank continues to monitor and assess the ESG performance of bond issuers by enhancing investment analysis, and strengthening pre-investment risk identification, in-investment credit reviews, and post-investment risk management. This can promote green investment and sustainable development.

# Section VI Impact of Environmental Risks on Financial Institutions

The Bank identifies environmental risks and opportunities that may arise in its production and operational activities, and takes various measures to address them. It explores climate risk stress tests to gradually enhance its ability to respond to climate change.

## I. Identification of Environmental Risks and Opportunities

With the increasing occurrences of environmental and climate issues, the Bank recognizes the potential impact of climate change on its overall strategic landscape and financial condition. In order to address potential climate risks and seize development opportunities stemming from climate change, the Bank has referenced the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). It has systematically identified and assessed relevant risks and opportunities from dimensions including physical risks, transition risks, and climate opportunities, in line with the Bank's business development situation and characteristics.

### 1. Environmental risk identification

Environmental risks primarily take the forms of physical risks and transition risks, potentially resulting in direct or indirect impacts on the Bank. Physical risks typically mean potential extreme weather events that cause significant damage to the balance sheets of businesses, households, and financial institutions, leading to financial and macroeconomic instability. Transition risks mean changes in climate policies, technology, market sentiment, and other factors during the transition to a low-carbon economy, leading to movements in asset prices or broader economic crises. The Bank conducts thorough analysis of climate change-related risks across various dimensions such as duration, category, and mitigation strategies. It delves into the financial risk mechanisms resulted from climate change to bolster its climate risk management initiatives.

Risk Category	Potential impact	Duration	Mitigate measures
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Risk Category		Potential impact	Duration	Mitigate measures
Physical risk	Immediate risk	As global climate change intensifies, extreme weather events such as typhoons, floods, and heat-waves are more frequent, with their intensity continually increasing. These extreme weather events may cause severe disruptions to the production and operations of the Bank's clients, leading to business interruptions, supply chain disruptions, and varying degrees of damage to their fixed assets such as factories and equipment. Consequently, there is a significant risk of asset impairment and an increase in the likelihood of defaults. The Bank's sites in various locations may also be forced to temporarily suspend operations due to the impact of extreme weather, with some financial infrastructure being damaged and an increase in daily operating costs.	Short term	For asset management, the Bank explores incorporating physical climate risks into its risk management framework. The Bank has initiated pilot projects for analyzing physical climate risks related to agricultural assets and credit bond issuers in the Yangtze River Delta region. It has completed in-depth assessments of the potential impacts of extreme weather events on agricultural production and business operations within the region. In terms of agricultural business and credit bond investments in the Yangtze River Delta region, the Bank will pay closer attention to the measures taken by clients in water-saving irrigation, drought resistance, flood prevention, wind disaster mitigation, and other aspects, guide and support clients to enhance agricultural production resilience and strengthen their ability to withstand natural disasters, and better safeguard the security of financial assets.
	Non-immediate risk	With the continuous rise of global average temperatures and gradual decline of soil productivity, clients in certain industries and regions may face challenges such as increased production costs and reduced output efficiency, which significantly impair profitability. The Bank's own operating costs may also increase with greater pressure on daily operational management. What is more, the risk of rising sea levels is increasingly prominent. Clients in coastal areas may face challenges such as seawater intrusion and land salinization, which may result in intermittent	Middle to long term	In terms of operations and management, natural disasters triggered by extreme weather events may pose a threat to the normal operation of bank sites, endangering the employees and customers' lives and properties. The Bank attaches great importance to this with a feasible emergency response mechanism for catastrophic weather events. A specialized emergency response team has been set, and the roles and responsibilities of each department and position are

Risk Category		Potential impact	Duration	Mitigate measures
		production activities and continuous accumulation of operating losses, as well as damaged infrastructure and deterioration in asset quality.		defined in disaster weather prevention efforts. The Bank has developed and enhanced relevant emergency plans, and allocated necessary disaster prevention supplies and facilities. At the same time, the Bank emphasizes the enhancement of employees' emergency response capabilities by arranging regular disaster prevention and mitigation training sessions and drills. To address the frequent occurrence of typhoons, floods, and other disaster weather events, the Bank has established a specialized inspection mechanism to promptly identify and eliminate various types of hazards, thereby minimizing disaster losses.
Transformation risk	Policy and regulation risk	<p>Guided by the “dual carbon” goals, China is accelerating its transition to a low-carbon economy, with relevant policies and standards being issued continually. This means an increase in operating costs and compliance risks for high-energy-consuming and high-emission businesses.</p> <p>As a financial institution, the Bank is also subject to increasingly stringent climate risk management requirements. Additional compliance costs may also occur.</p>	Short, middle to long term	<p>At the business level, the Bank consistently endeavors to construct a comprehensive framework for green finance products and services by innovating green, low-carbon financial products to meet the diverse financing needs of clients throughout their green transition journey. By providing credit support for low-carbon projects and assisting entities in issuing green bonds, the Bank directs more social capital towards green industries, thereby facilitating the real economy in low-carbon transformation.</p>
	Technology risk	<p>With the continuous advancement of low-carbon technologies, the existing high-carbon businesses or products of some clients may face the risk of shrinking market demand. To align with the low-carbon development trend, these clients</p>	Short to middle term	<p>In credit operations, the Bank screens financing applications from industries with high pollution, high energy consumption, and overcapacity, reducing the scale of loans to these industries. Meanwhile, the</p>

Risk Category	Potential impact	Duration	Mitigate measures
	<p>need to take technological upgrades and business transformations, which requires substantial investment and entails certain technical risks. Some clients may find themselves in operational distress due to the high transitional costs or incorrect technological choices, which subsequently negatively impacts their debt-servicing ability.</p>		<p>Bank performs green categorization of credit assets, manages credit assets based on their environmental benefits and prioritizes support for projects with positive environmental benefits.</p> <p>The Bank also performs stress tests on the transition risks of high-carbon industries. Through scenario analysis and sensitivity testing, the Bank assesses the financial condition, credit quality, and default risks of high-carbon industry clients under the NGFS transition delay scenario. This lays the groundwork for future risk management. The Bank also explores carbon accounting for credit assets, analyzes the carbon footprint of credit assets, and create a roadmap for carbon neutrality of credit assets. It strives to contribute to achieving the “dual carbon” goals through efforts in the financial sector.</p>
Market risk	<p>In the context of the transition to a low-carbon economy, market demand is accelerating towards green and low-carbon sectors. For clients still reliant on high-carbon products or services, the reduction in market demand and the increase in costs of high-carbon raw materials may lead to risks such as decreased income, asset devaluation, and increased operating costs. As a financial institution, the quality of the Bank’s assets may be impacted to some extent by deterioration in the operating conditions of these clients.</p> <p>Meanwhile, the market demand for green financial products is increasing. An increasing number of clients expect the Bank to offer a diverse range of green products and services to support their green transition. Failure to catch market trends, such as timely developing and promoting high-quality green financial products, and effectively controlling ESG risks throughout the product and service lifecycle may expose the Bank to the risk of customer</p>	Middle to long term	<p>In its own operations, the Bank places high importance on energy efficiency and emission reduction in daily business activities. Operational carbon emissions accounting is applied to clarify the Bank’s own carbon footprint. The Bank plans to further set measurable operational carbon reduction targets. Through measures such as improving energy efficiency, optimizing business processes, and promoting green office practices, we aim to minimize carbon emissions from operational activities and fulfill the social responsibility of an</p>



Risk Category		Potential impact	Duration	Mitigate measures
		loss.		environmentally friendly financial institution.
	Reputation risk	Poor performance in climate risk management and green finance practices, and failure to implement the Principles for Responsible Banking may trigger questioning of the Bank’s reputation and brand image by stakeholders, leading to reputation damage.	Short, middle to long term	As a signatory to the United Nations Principles for Responsible Banking, the Bank has publicly committed to aligning its business strategy with the goals of the <i>Paris Agreement</i> and China’s “dual carbon” goals. The Bank will explore identifying, assessing, and managing climate risks across all businesses, reducing risk exposure in high-pollution and carbon-intensive industries, and supporting clients in their green and low-carbon transformations.

## 2. Environmental opportunity identification

The Bank seizes market opportunities presented by national goals such as carbon peaking and carbon neutrality, industrial transformation, and the comprehensive effort into a green and low-carbon lifestyle system. We promote innovation in green finance business and products, increase the presence of green financial products, significantly enhance the proportion of green credit assets across the Bank, make a green credit strategy that aligns with regional development strategies, integrates with inclusive innovation, achieves breakthroughs in key areas, and comprehensively implements green concepts. This aims to drive the entire Bank’s business towards green transformation.

Opportunity Category		Potential impact	Duration	Actions
Clim ate-related opportunities	Resource efficiency opportunities	Improving resource efficiency and energy efficiency can both reduce the consumption of natural resources, electricity consumption, and the generation of waste. This can effectively lower the operation costs for the Bank and its clients.	Mid-term	At the business level, the Bank places great emphasis on the development of green finance. Through integrated effort into policies, products and systems, it provides customers with comprehensive financial services for low-carbon transformation. In terms of product

Opportunity Category	Potential impact	Duration	Actions
Opportunities in energy sources	Promoting renewable energy sources can help mitigate the risk of energy price fluctuations in operations. The lower carbon emissions during the operation of renewable energy projects make it easier for businesses to control carbon emission costs and reduce overall operation expenses. On the other hand, actively utilizing renewable energy resources showcases an organization's green image, which can garner recognition from consumers and investors, and enhance its brand reputation.	Middle to long term	<p>innovation in green finance, the Bank has introduced a range of distinctive credit products such as pollution right mortgage loans, SHEA pledge financing, CCER pledge financing, distributed photovoltaic loans, and ESG-linked loans, to support the development of green industries.</p> <p>In the green finance market, the Bank directs more social capital towards low-carbon projects by investing in green bonds. Through financial leverage, this contributes to the realization of the “dual carbon” goals. The Bank will further enrich its green finance product range, expand green investment and financing, and promote the virtuous cycle of green and low-carbon development.</p>
Product and service opportunities	The “dual carbon” goals have unveiled significant development opportunities for green and low-carbon industries. A growing number of businesses are beginning to prioritize low-carbon transitions, leading to a continuous growth in demand for green financial products and services. The Bank innovates and develops green financial products, which can better meet the diverse financing needs of customers in low-carbon transitions, thereby accelerating the development of green industries and opening up new spaces for revenue growth.	Short, middle to long term	<p>At the operation level, the Bank sets an example by advocating for green and low-carbon practices. On one hand, the Bank optimizes its operation model by adopting a series of energy-saving and emission-reduction measures. These include adopting energy-efficient power equipment in office spaces and promoting double-sided printing to maximize the efficiency of energy and resource utilization to reduce operation costs. On the other hand, the Bank explores the application of renewable energy sources. For instance, at the Zhangjiang High-tech sub-branch, it is piloting solar power generation, aiming to achieve “zero carbon” emissions in operations. It also</p>
Adaption opportunity	Climate change has become a common challenge for the mankind. Frequent extreme weather events pose severe challenges to the production and operation of industrial and commercial companies. More and more clients are aware that	Middle to long term	

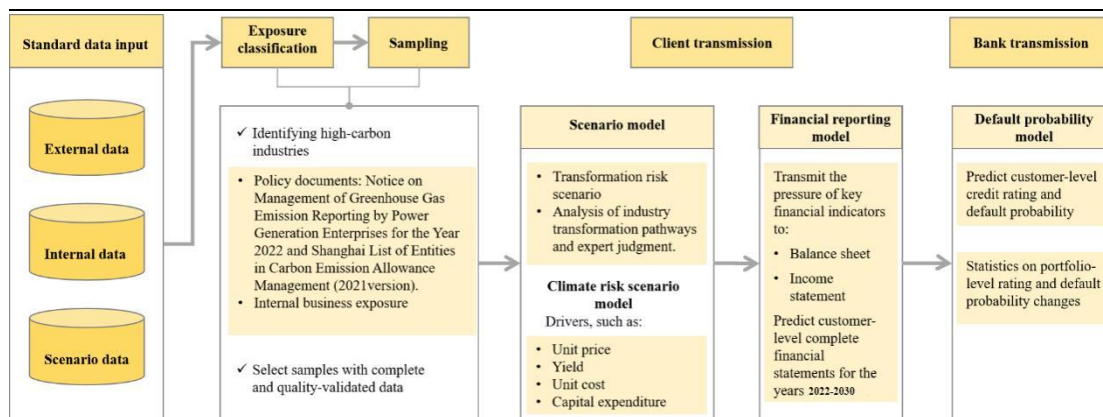
Opportunity Category	Potential impact	Duration	Actions
	that focusing solely on their own decarbonization efforts is far from sufficient; they also need to enhance adaptive capacity to address the impacts of climate change. This has created new opportunities for the banking sector to develop climate adaptive financial products.		encourages employees to opt for low-carbon and green travel options and tries to shape an office environment featuring energy efficiency and environmental protection. With the joint efforts of all levels, the Zhangjiang High-tech sub-branch has achieved carbon neutrality for three consecutive years, setting an example across the Bank.

## II. Quantitative Analysis of Environmental Risks

### 1. Climate risk stress test

The Bank has conducted climate risk sensitivity stress testing to assess the potential impact of the transition to carbon peaking and carbon neutrality on its credit assets. The test focused on high-carbon industries such as power generation, construction materials, steel, non-ferrous metals, petrochemicals, chemicals, paper-making, civil aviation, and corporate clients included in Shanghai's carbon emissions allowance management. The Bank has specifically examined the impact of rising carbon emissions costs on asset quality and capital adequacy ratio, to test its ability to address climate risks within the context of the carbon peaking and carbon neutrality goals.

The scenario of transition delay as defined by the People's Bank of China and the Network for Greening the Financial System (NGFS) were adopted in the stress test. An internal rating model was adopted to calculate on a per-client basis from the bottom up, and estimated enterprise carbon emissions using a specific methodology to quantify the impact of climate transition risks on client's financial costs and credit ratings. Assuming that during the testing period, the enterprise is required to pay carbon emissions fees and continue operations at existing technological levels, the test assessed the potential impact on its repayment capacity, reflected in changes in default probabilities and credit ratings. The year-end of 2022 was the baseline for this test which would last 8 years.



### Climate risk stress test path at SHRCB

According to the test results, the credit ratings of the mentioned client would experience downgrade under stress scenarios. However, due to the relatively low exposure to climate risks, the impact on the overall capital adequacy ratio of the Bank is limited., all requirements of regulatory compliance are met, and the risks are manageable from a general perspective.

# Section VII Environmental Impact of Investing and Financing Activities

The Bank has increased its focus on the environmental impact of its asset structure by starting carbon emissions accounting for investment and financing activities and quantifying the environmental benefits of green loans and green bonds. This is intended to enhance the “green content” of its assets.

## I. Carbon Emissions of Investing and Financing Activities

The Bank remains committed to aligning with the national “dual carbon” goal and resonates with the green development of the Yangtze River Delta economy by effectively supporting the real economy. Its credit asset scale continues to grow steadily.

### 1. Emissions of credit assets

In 2023, the carbon accounting for credit assets was continued with the coverage of the accounting extended. The Bank used the Partnership for Carbon Accounting Financials (PCAF) methodology to calculate the carbon emissions of its credit assets through attribution factors. Based on the carbon emissions disclosed in the ESG and sustainability reports of publicly listed corporate clients, as well as energy consumption and industrial production data from the *China Statistical Yearbook 2023*, the Bank summarized industry-specific emission factors, and assessed loans in the eight high-emission industries according to the comprehensive evaluation standards of green finance set by the People’s Bank of China.

As of the end of 2023, the monthly average balance of corporate loans covered by the calculation was 352.501 billion yuan, corresponding to a total carbon emissions of 6,953,600 tons, with a carbon emission intensity of 19.73 tons of carbon dioxide equivalent per million yuan.

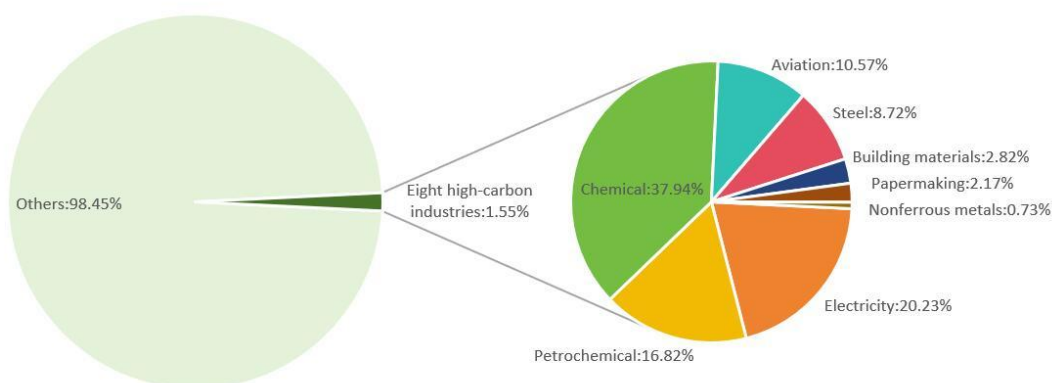
Indicator name	Unit	2022	2023	Change
Total carbon emissions	10,000 tCO <sub>2</sub> e	657.42	695.35	5.77%
Balance of corporate loans covered by the accounting scope	100 million yuan	3,146.36	3,525.01	12.03%
Carbon intensity of loans	tCO <sub>2</sub> e/million yuan	20.89	19.73	-5.57%

Specifically, the monthly average balance of corporate loans in high-emission industries<sup>10</sup> covered by the calculation was 5.362 billion yuan, corresponding to a total carbon emissions of 1,202,700 tons, with a carbon emission intensity of 224.28 tons of carbon dioxide equivalent per million yuan.

Indicator name	Unit	2022	2023	Change
Total carbon emissions	10,000 tCO <sub>2</sub> e	88.95	120.27	35.21%
Balance of corporate loans covered by the accounting scope	100 million yuan	40.61	53.62	32.04%
Carbon intensity of loans	tCO <sub>2</sub> e/million yuan	219.05	224.28	2.39%

Column: Emissions of high-carbon assets

According to the scope of the eight high-carbon industries determined in the comprehensive evaluation standards of green finance by the People’s Bank of China, SHRCB’s balance of loans in high-carbon industries in 2023 amounted to 5.362 billion yuan, with a total carbon emissions of 1,202,700 tons, resulting in a carbon emission intensity of 224.28 tons of carbon dioxide equivalent per million yuan.



Industry	Monthly balance of loans (100 million yuan)	Carbon emissions (10,000 tCO <sub>2</sub> e)
Electricity	10.52	20.92
Construction materials	1.43	2.24
Steel & iron	4.59	21.79
Non-ferrous metals	0.38	1.44
Petrochemical	9.21	28.48
Chemical engineering	20.52	41.95
Paper Making	1.19	0.71
Aviation	5.79	2.75
Total	53.62	120.27



<sup>10</sup> The statistical scope for high-carbon industries follows the comprehensive evaluation standards of green finance set by the People's Bank of China. It includes eight specific sectors: electricity, construction materials, steel, non-ferrous metals, petrochemicals, chemical engineering, papermaking, and aviation.

## 2. Quality of carbon emission data

With reference to the methodology of the Partnership for Carbon Accounting Financials (PCAF) and relevant local guidelines<sup>11</sup>, the Bank has embarked on explorations to disclose the data quality of investment and financing benefits. It has calculated and disclosed for the first time the data quality of carbon emission from credit assets, aiming to gradually enhance its level of carbon accounting and information disclosure.

No.	Data sources	Balance of loans (100 million yuan)	Data quality
1	Reporting-based <sup>12</sup>	113.60	1
2	Activity-based <sup>13</sup>	3,411.41	5
Quality of carbon emission data for credit assets			4.87

## II. Environmental Benefits of Investing and Financing Activities

### 1. Environmental benefits of green credit

The Bank is committed to green finance, with a continuous increase in the balance and growth rate of green loans. As of the end of 2023, the balance of green loans at the Bank amounted to 61.431 billion yuan, representing a year-on-year growth of 41.00%. Specifically, the combined balance of loans for green infrastructure upgrade, energy efficiency, environmental protection, and clean energy industries totaled 48.557 billion yuan.

Category	Indicator	Unit	2022	2023	Change trend
Green credit	Green credit balance	100 million yuan	435.67	614.31	41.00%
	-Green infrastructure upgrade	100 million yuan	156.11	245.80	57.45%
	Energy efficiency and environmental protection industries	100 million yuan	113.97	139.31	22.23%
	Clean energy industry	100 million yuan	84.22	100.46	19.28%

<sup>11</sup> The methods outlined in the draft document Guidelines for Carbon Emission Accounting and Information Disclosure for Financial Institutions in Pudong New Area issued by the Pudong New Area Financial Bureau for measuring the data quality of carbon emissions were used.

<sup>12</sup> This approach involves obtaining corporate carbon emission data through publicly available channels such as corporate ESG reports and corporate social responsibility reports.

<sup>13</sup> This approach involves deriving corporate carbon emission data by converting economic activity intensity data of the specific entity and the industry average statistical data.

The Bank has increased its support for green projects to help drive the sustainable development and environmental protection forward. In accordance with the requirements outlined in the Annex the *Guidelines for Calculating Energy Conservation and Emission Reduction for Green Credit Projects* attached to the *Notice on Work of Green Financing Statistical System* (HYBJBT [2020] No. 87) as well as other relevant documents, the Bank calculates the environmental benefits generated by green project loans based on essential data such as approvals of green projects, energy conservation assessment reports, and environmental impact assessment reports provided by clients.

As of the end of 2023, the Bank's balance of project loans eligible for environmental benefits assessment amounted to 7.668 billion yuan. These loans covered various sectors including clean energy generation, green construction, and sustainable shipping and equated to saving 1,509,400 tons of standard coal equivalent and reducing carbon dioxide equivalent by 3,466,500 tons.

Indicator name	Unit	2022	2023 <sup>14</sup>
Balance of project loans covered into the accounting scope	100 million yuan	54.21	76.68
Savings of tCEs	10,000 tons	62.21	150.94
Reduction of carbon dioxide emissions	10,000 tCO <sub>2</sub> e	192.42	346.65
Water savings	10,000 tons	7.59	386.17
Reduction of sulfur dioxide emissions	Ton	5,333.37	1,181.04
Reduction of nitrogen oxides emissions	Ton	1,517.99	159.08
Reduction of COD discharges	Ton	-	1,337.11
Reduction of ammonia nitrogen emissions	Ton	390.23	214.60
Reduction of total nitrogen emissions	Ton	422.94	100.69
Reduction of total phosphorus emissions	Ton	71.16	18.98
Reduction of smoke emissions	Ton	-	261.71
Reduction of VOC discharges	Ton	-	28.74

### Case study: Supporting for the renovation of aged water supply pipelines

Renovating aged water supply pipelines is a crucial measure to minimize water supply network leakage and improve regional water efficiency. One such renovation project for aging water supply pipelines requires a total investment of 507.64 million

yuan, and involves the renovation of approximately 42.9 kilometers of water supply pipelines across multiple regions, as well as installation of municipal fire hydrants, plants restoration along roads, and construction of construction access roads according to specifications. Calculations reveals that this project can achieve an annual water savings of 24.2988 million tons during the reporting period.

### **Case study: Supporting for the green building project in an integrated commerce center**

An integrated commerce center project has obtained the certification for two-star green building design and complies with the green building design standards of Shanghai. The project requires a total investment of 2.8 billion yuan, with a floor area of 122,600 square meters. The project can ensure an energy-saving rate of 65%, a green area ratio of 13.70%, and a renewable energy utilization rate of 46.15%. According to calculations, the project can save 1,096.76 tons of standard coal equivalent, and reduce 2,565.91 tons of carbon dioxide emissions, 0.49 tons of nitrogen oxides emissions, 0.30 tons of sulfur dioxide emission, and 0.06 tons of smoke emission during the reporting period.

## **2. Environmental benefits of green bonds**

The Bank continually strengthens its investment in green bonds, emphasizing the positive environmental impact of green bond investments. Following the principles of the Partnership for Carbon Accounting Financials (PCAF), the Bank calculates the environmental benefits of its green bond holdings. This involves using the proportion of the face value of its green bond holdings to the total issuance, along with publicly available green bond assessment reports certified by third-party organizations.

Calculations show that the Bank's green bond holdings totaling 1.54 billion yuan with measurable environmental benefits. These bonds are expected to save at least 161,900 tons of standard coal equivalent and reduce carbon dioxide emissions by 372,800 tons.

<b>Indicator name</b>	<b>Unit</b>	<b>2022</b>	<b>2023</b>
Balance of green bonds covered into the accounting scope	100 million yuan	48.60	15.40
Savings of tCEs	10,000 tons	-	16.19
Reduction of CO <sub>2</sub> e emissions	10,000 tCO <sub>2</sub> e	39.35	37.28
Reduction of sulfur dioxide emissions	Ton	-	93.15
Reduction of nitrogen oxides emissions	Ton	-	90.57
Reduction of smoke emissions	Ton	-	13.39

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**Case study: Supporting for wind and solar power generation projects**

In 2023, the funds raised from the issuance of the 2021 first tranche Green Medium-Term Notes (Bond Code: 21 Shenzhen Energy MTN009, Carbon Neutrality Bonds) by Shenzhen Energy Group Co., Ltd., in which the Bank took part, were completely used for the construction of the issuer's wind power and photovoltaic power generation projects. According to the publicly available green bond assessment report certified by a third-party agency, the bonds are expected to achieve annual energy savings equivalent to 202,900 tons of standard coal, reducing carbon dioxide emissions by 577,500 tons, nitrogen oxide emissions by 92.55 tons, sulfur dioxide emissions by 57.76 tons, and smoke emissions by 11.83 tons. As of the end of 2023, the Bank held a face value of 30 million yuan of the green bond, accounting for 1.00% of the total issuance. This translated to energy savings equivalent to 2,000 tons of standard coal, reducing carbon dioxide emissions by 5,800 tons, nitrogen oxide emissions by 0.93 tons, sulfur dioxide emissions by 0.58 tons, and smoke emissions by 0.12 tons.

## Section VIII Environmental Impact of Operating Activities

The Bank promotes green office practices by strengthening management of daily operational energy and resource consumption, as well as greenhouse gas emissions, and enhancing the awareness of sustainable development among employees. It fosters a culture of environmental responsibility and guides employees towards adopting green lifestyles.

### I. Energy and Resource Consumption

The Bank steadily advances energy conservation on the green development path. Enhanced and refined management of office buildings, business vehicles, meeting rooms, warehouses, and other properties are ensured to reduce unnecessary energy consumption. As the COVID-19 pandemic came to an end, the Bank returned to normal operations, resulting in an increase in various types of energy and resource consumption in 2023.

Resource consumption		Unit	2021	2022	2023
Natural gas	Total	10,000 m <sup>3</sup>	28.09	30.79	32.96
	Per-capita	m <sup>3</sup>	29.08	29.21	30.46
Petroleum	Total	10kL	36.38	30.92	43.79
	Per-capita	L	37.66	29.33	40.48
Diesel	Total	10kL	4.14	3.04	7.15
	Per-capita	L	4.29	2.88	6.61
Water	Total	Ton	9,593.00	9,605.00	11,525.00
	Per-capita	Ton	7.90	6.40	7.35
Electricity	Total	10,000 kWh	6,699.29	7,355.81	8,148.17
	Per-capita	kWh	6,935.80	6,978.28	7,531.35
Paper	Total	Ton	45.15	37.43	26.80
	Per-capita	Kg	12.62	10.46	7.49

### II. Carbon Emissions of Operating Activities

#### 1. Carbon emission accounting

The Bank exerts great effort into its operational carbon emission management by

calculating the carbon emissions generated during the reporting period. In 2023, the Bank expanded the scope of operational carbon emissions coverage by including Scope III emissions. According to accounting, in 2023, the Bank's total greenhouse gas emissions amounted to 50,370.48 tons, with a per capita emission of 4.66 tons.

Emission type	Unit	2021	2022	2023
Total greenhouse gas emission <sup>15</sup>	Ton	40,438.55	43,396.69	50,370.48
Scope I	Ton	1,515.68	1,446.45	1,878.67
Scope II	Ton	38,922.87	41,950.24	46,469.00
Scope III	Ton	-	-	2,022.81
Per-capita greenhouse gas emissions	Ton/person	4.19	4.12	4.66
Greenhouse gas emissions per unit area	Ton/m <sup>2</sup>	0.07	0.07	0.08

## 2. Quality of carbon emission data

With reference to the methodology recommended by the Partnership for Carbon Accounting Financials (PCAF), and given the emission sources and data sources, the Bank calculates the quality of its operation-related carbon emissions.

Accounting type	Emission sources	Data sources	Carbon emissions (ton)	Data quality
Scope I	Natural gas	Reporting approach	712.63	1
	Petroleum	Reporting approach	972.70	1
	Diesel	Reporting approach	193.34	1
Scope II	Electricity	Reporting approach	46,469.00	1
Scope III	Paper	Economic activity approach	47.17	5
	Water	Economic activity approach	21.32	5
	Kitchen waste	Economic activity approach	0.19	5
	Electronic products	Reporting approach	1,896.39	1
	Accommodations	Reporting approach	57.74	1
<b>Total</b>			<b>50,370.48</b>	<b>1.01</b>

## III. Green Operations

### 1. Green office

The Bank advances green operations by taking various measures across multiple fronts such as water usage, electricity consumption, and paper usage to promote



energy conservation and reduction throughout the entire organization. In 2023, a printing management system was installed in the office area of the Bank's headquarters building, as a way to facilitate double-sided printing to reduce office paper consumption. The Bank successfully developed a Low Carbon Life mini-program for employees within the office software BanBan, which calculates carbon emissions and points based on different employee behaviors; this aimed to encourage energy-saving acts to reduce energy consumption. The Bank also enhanced its video conferencing system to further promote paperless meetings, and held 2,774 video conferences in 2023.

Waste management <sup>17</sup>		Unit	2021	2022	2023
General waste	Disposed electronic and office supplies	Piece	16,099	13,605	17,338
	Disposed kitchen waste	Ton	53	67	43.75
Dangerous waste	Disposed toner and ink cartridges	Ton	7.5	6.9	6.6

## 2 . Green sites

In promoting green operations, the Bank endeavors to create green bank demonstration sites and carbon-neutral sites which achieve carbon neutrality in both the construction and daily operations.

### **Case study: Building a green bank demonstration site in Shanghai**

Sijing sub-branch was selected as the pilot and starting point for the Bank to build green and low-carbon business sites across the organization. The sub-branch became Shanghai's green bank demonstration site and was awarded the Silver Prize in the Assessment of Green and Low-Carbon Renovation of Existing Buildings in Shanghai. Additionally, it was selected as one of the hundred cases showcased at the 2023 Shanghai Urban Expo focusing on green renovation of existing buildings. Toned by the rich cultural and historical heritage and the human-friendly environment of Sijing Ancient Town in Songjiang District, Sijing sub-branch utilized eco-friendly materials, high-efficiency electromechanical equipment, age-friendly facilities, green low-carbon operations, and innovative technological measures to develop itself into a people-centric, green, and low-carbon bank site. Starting from the design phase, the sub-branch fully considered its own needs, design capacity, equipment selection and layout, system efficiency, and green low-carbon effects. The design was based on the *Technology Directory for Green Banking Sites in Shanghai* and the *Rules on Certification of Green Banking Sites in Shanghai (Trial)*. This approach integrated the

green concept into the entire lifecycle of bank site planning, design, construction, and operation, and embodied multidimensional design philosophy that emphasizes health, applicability, and efficiency.

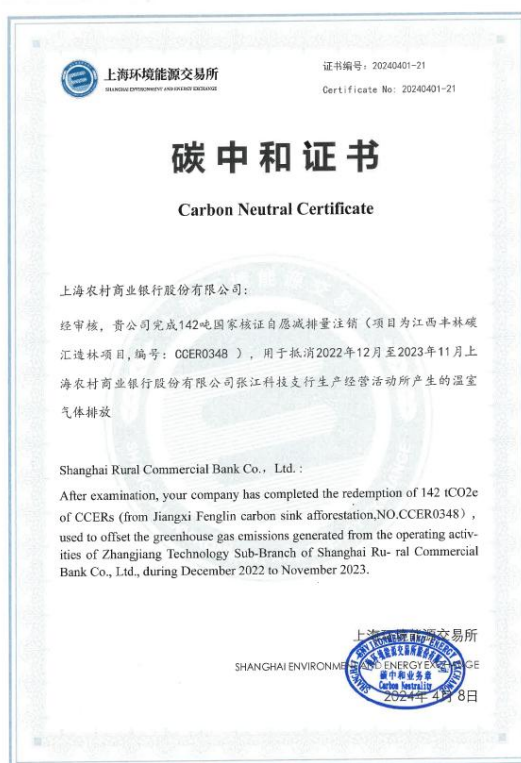


Green decorations in Sijing sub-branch

### Case study: Zhangjiang High-tech sub-branch achieved carbon neutrality for three consecutive years

Since 2021, Zhangjiang High-tech sub-branch has achieved carbon neutrality for three consecutive years. It is the first banking site in Shanghai to achieve carbon neutrality and the first technology sub-branch in China to do so. In 2023, the Bank continued to push itself by expanding the scope of greenhouse gas inventory at Zhangjiang High-tech sub-branch to include methane, nitrous oxide, and other gases. This has demonstrated its fulfillment of its social responsibility from the operational

level.



Zhangjiang High-tech sub-branch's carbon neutrality certificate

### 3. Green procurement

In terms of supplier management, the Bank has incorporated carbon neutrality certificates and environmental management system certification (ISO 14001) into its procurement scoring framework. These certifications are used as key evaluation criteria to encourage suppliers to make efforts in reducing carbon emissions and improving environmental management.

With environmental protection, resource conservation, safety and health, circular and low-carbon practices, and recycling promotion fully taken into account, the Bank prioritizes the procurement of electronic equipment certified to 3C standard and with eco-labels. It also promotes electronic procurement and other online purchasing methods to reduce energy consumption and carbon emissions in the procurement process.

### 4. Green operations

Guided by green technology development, the Bank has accelerated digital transformation by expanding and refining the functionalities of its mobile banking application.

- The Bank has launched an online deposit certificate function which allows users

to easily and quickly apply for and obtain the required certificates through the mobile banking app, without personally visiting bank sites and waiting in long queues. This move has greatly increased the convenience for customers to do financial transactions by saving time and energy, and also reduced resource consumption associated with printing paper certificates and customer travel.

- The Bank has newly introduced the electronic billing function, with which, customers can easily manage and view their transaction details without traditional paper bills. This action not only ensures the transparent and real-time billing management but also further reduces paper consumptions.
- The Bank has optimized and upgraded the electronic receipt function, making transaction records more intuitive and clearer, and enhanced the search, filter, and export features, improving the convenience and accuracy with which users can obtain the information they need. This action can reduce clients' reliance on paper receipts, thereby lowering resource consumption.

# Section IX Data Sorting, Validation and Protection

The Bank has been improving its data compliance and governance system, and refining the organizational structure to ensure compliance throughout the entire process of data production, reporting, and usage. As a result, its data quality control capabilities have been enhanced.

## I. Data Security Laws and Regulations

The Bank has released *SHRCB Data Security Management Procedures* and other institutional documents based on the *Data Security Law of the People's Republic of China*, the *Financial Data Security — Security Specification of Data Life Cycle (JR/T0223-2021)*, and related regulatory requirements. It has created a bank-wide data security management organization and security grading standards. Each responsible department determines the security level of data within their business domain according to these grading standards. The Bank has defined security policies and standards across various dimensions, including data collection, transmission, storage, usage, deletion, and destruction. This further strengthens its data security management, protects customer privacy, reduces data breach risks, and ensures the confidentiality, integrity, and availability of data.

In accordance with national data classification regulations, the Bank has classified our data security into four grades based on the impact of data breaches on affected parties and the severity of the impact. It has also clearly defined security policies and standards for data at different security grades in scenarios such as data collection, transmission, storage, usage, deletion, and destruction.

## II. Data Quality Validation

In accordance with regulatory requirements and internal arrangements, the Bank advances various data governance initiatives with full steam ahead. Leveraging green finance standardization, it has been enhancing data standard management to continually improve the quality of green credit data.

With a firm commitment to green finance development strategy, and in

alignment with external regulatory requirements such as the *Notice of the People's Bank of China on Revising the Special Statistical System for Green Loans (YF [2019] No. 326)* and the *Notice of the Shanghai Banking and Insurance Regulatory Office on Relevant Work of Green Financing Statistical System (HYBJBT [2020] No. 87)*, the Bank spares no effort into creating standard systems. It enforces and promotes various standards including national standards and industry standards, and devise internal standards such as green credit classification, to standardize and normalize data accordingly. In the closed-loop governance model of “prevention at the source - monitoring and inspection - evaluation and assessment”, the Bank uses the six-step method - defining (rules), measuring (data), analyzing (reasons), correcting (issues), controlling (quality), and evaluating (effects) - to continuously monitor, analyze, feedback, and correct. This process enables the Bank to continually improve data quality, enhance systems, and increase the efficiency of data applications.

In 2023, the Bank set up the “special + routine” mechanism for identifying and resolving issues. It defined inspection rules on the cloud inspection platform, and regularly monitored the quality of source data. Through the data control platform, central data tracking and correction measures are ensured.

### **Case study: Elevating data quality management and control for green finance**

The Bank attaches great importance to the data quality for green finance by standardizing green certification criteria at the institutional level. In terms of green credit, it has created *SHRCB Green Credit Classification Standard*. To further clarify and improve the classification and certification requirements for green credit, and enhance the bank-wide understanding and awareness of green banking to facilitate the daily operations of branches, the Bank has compiled a summary of green credit certification issues and requirements, and developed a guidance document. In 2023, it released the *Notice on Further Strengthening the Certification and Classification of Green Credit* and the *Notice on Further Standardizing the Certification of Green Credit and Improving Data Quality*. In terms of green bonds, the Bank has devised the *Notice on Further Clarifying Green Bond Classification Standards and Regulatory Reporting Requirements*, providing detailed guidance on the determination and classification standards for green bonds within the Bank, as well as the regulatory reporting requirements.

The Bank takes on-going effort into the governance of green finance data. Through regular checks and training initiatives, it enhances the bank-wide



understanding of green certification standards, thus ensuring continuous improvements in the data quality for green finance. In 2023, the Bank organized a bank-wide self-assessment of green finance data, and on-site inspections of data quality at selected branches. These inspections focused on the quality of source data for green credit, with from time to time spot checks on green finance data, to identify and rectify any potential errors, thereby ensuring the integrity and accuracy of the data. The Bank also enhances training on green banking standards. It provided multiple rounds of training on green certification standards for relevant departments at both the headquarters and branch levels, to elevate the understanding of green loan standards among all business and risk management personnel, thereby improving the level of green finance across the Bank.

### III. Customer Privacy Protection

With adherence to the minimum necessary principle, the Bank only gathers necessary personal data directly relevant to the business at hand. Prior to collection, users are informed of the specific purposes, methods, and scope of information collection, and their consent is obtained. The Bank also takes effective control measures to prevent the leakage of personal information and critical data during the collection process, as a way to ensure that customer privacy is lawfully protected.

It has released management policies such as the *SHRCB Procedure on the Protection of Personal Customer Information* and the *SHRCB Policy on the Management of Personal Information Protection*. The Bank has conducted special security assessments on the collection of user data and the policies for safeguarding personal privacy regarding mobile Internet applications, ensuring that these practices comply with the requirements of relevant national standards.

### IV. Data Security Emergency Plan

*SHRCB Special Emergency Plan for Cybersecurity Incidents* has been released to ensure swift and effective response in the event of cybersecurity incidents. To maintain the timeliness and adaptability of the emergency plans, at least one assessment and enhancement of the plans are conducted annually. This ensures that the plan reflects the latest threat landscape and technological developments.

The Bank organizes emergency drills in accordance with the emergency drill plan and enhances emergency response procedures accordingly. Regular

cybersecurity emergency drills and routine phishing email exercises are conducted in the Bank. Simulations of real-world cyberattack scenarios are used to assess employees' response capabilities and cybersecurity awareness during actual operations. With the production data backup recovery verification plan in place, the Bank randomly samples and recovers production data backup media to ensure the integrity and availability of backup data.

In the *SHRCB Data Emergency Management Procedure*, the Bank has further specified the responsibilities of each unit in data emergency management, standardized data emergency preparedness, drills, activation, and response procedures, in order to effectively cope with various emergency situations.

# Section X Green Finance Innovation and Research Achievements

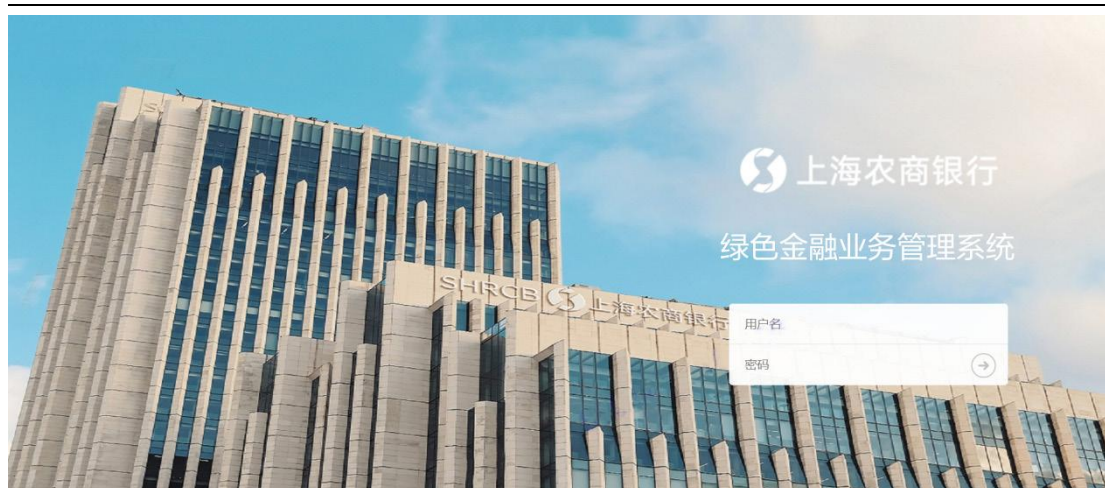
## I. Digital Transformation

Embracing the concept of the digital economy, the Bank continuously explores the path of digital transformation driven by both business and data. Focusing on core application scenarios such as management systems, transaction systems, and operational systems, it uses data applications to empower business development and advance process optimization and operational efficiency.

### 1. Management system

To accelerate the digital transformation of green finance, the Bank is advancing the management systems for green finance business. The management system comprises modules for intelligent identification of green assets, calculation of environmental benefits, and statistical queries. It is designed to provide the Bank with professional tools for identifying green assets, thereby ensuring compliance with regulatory requirements for the identification and certification of green credit. Online certification methods are leveraged to enhance the accuracy of green identification and improve the suitability and accuracy of green credit data management and reporting.

The first phase of this green finance business management system was fully launched in 2022 and underwent continuous optimization throughout 2023. The launch of the management system has significantly enhanced the efficiency and accuracy of green finance identification processes, and laid a solid foundation for the collection, statistics, and verification of green finance data. As of the end of 2023, the management system had served over 20,000 green clients and processed over 200,000 contracts.



### SHRCB green finance business management system

In 2023, the Bank developed the second phase functionalities of the green finance business management system, with a focus on integrating with internal business systems to embed the green certification process, thereby enhancing the efficiency of certification and subsequent differentiated management processes.

#### **2. Transaction system**

As an active player in carbon market development, the Bank catches the opportunities to collaborate with the Shanghai United Asset and Equity Exchange and the Shanghai Environment and Energy Exchange to provide comprehensive services for carbon emission allowance trading.

The Bank signed strategic cooperation agreements with the two exchanges in 2021. According to the agreement terms, the Bank intends to establish a long-term cooperation mechanism with the Shanghai United Asset and Equity Exchange, Shanghai Environment and Energy Exchange, Shanghai Agricultural Asset and Equity Exchange, and Shanghai Equity Exchange, and other comprehensive market entities. Through these cooperations, the Bank actively explores cooperation in asset trading, innovative financial products, market function enrichment, and collaboration in the “dual carbon” sector. It has signed a *Bank Cooperation Agreement on Carbon Emission Trading Settlement* with the Shanghai Environment and Energy Exchange, marking their joint effort into creating a carbon emission trading clearing system in the exchange.

In 2023, the Bank did an active job in developing the carbon emission trading system. The system was officially launched and put into operation during the year, facilitating services such as account opening, contract signing, withdrawals, deposits, inquiries, and reconciliation related to carbon emission trading funds.

#### **3. Operational system**

The Bank strengthens its green operational management by continuously upgrading its energy management platform called Xin Project. The platform enables real-time monitoring of air quality and energy consumption at sites, timely detection of peaks and anomalies in energy consumption such as air conditioning, lighting, and special electrical usage, collection and analysis of various monitoring data to help take sound energy-saving and water-saving measures, thereby improving energy efficiency. Xin Project platform will be able to predict equipment failures and control equipment operation status, automate maintenance, inspection, warranty, and other tasks, thereby reducing operating costs and enhancing the level of green and low-carbon management at Bank sites.



Xin Project energy management platform

## II. Prospective Research

Through the regular communication mechanisms with regulatory authorities, industry associations, research institutions, and other stakeholders, and with a focus on key issues such as green finance and financial transformation, the Bank actively participate in research projects in the field of green finance as a way to explore cutting-edge topics in green finance.

➤ ***Exploration of and Regulatory Consideration for ESG Practices in Banking and Insurance Institutions***

Attaching great importance to the pivotal role of ESG in aligning with new development concepts and advancing the achievement of “dual carbon” goals, the Bank actively explores the impact of ESG on financial institutions. In 2023, the Bank completed the research report titled *Exploration of and Regulatory Consideration for ESG Practices in Banking and Insurance Institutions*. Starting from the mode and path of embodying ESG principles in current banking and insurance institutions, the Bank delves into the analysis of advanced and typical ESG practices both domestically and internationally in the report, and summarizes the main models of ESG practices in banking and insurance institutions, focusing on strategic integration, mechanism creation, business development, green operations, and information disclosure. The report summarizes the challenges faced by banking and insurance institutions in executing ESG principles and provides recommendations for promoting ESG practices in these institutions.

➤ ***Research on the Support Models from Rural Financial Institutions for Rural Green Finance***

The Bank actively explores new models for serving rural revitalization, and facilitating deep integration between green finance and inclusive finance. In this regard, it has prepared a research paper titled *Research on the Support Models from Rural Financial Institutions for Rural Green Finance*. This paper employs theoretical research methods, case studies, and quantitative research methods to analyze the advantages, models, inter-bank cases, and green bond pricing models of rural financial institutions in developing green finance, and provides constructive suggestions for advancing the development of green finance in rural areas. This work won the third prize for outstanding research achievements made by enterprises within Shanghai’s SASACSC system in 2023.

➤ ***Research on Carbon Accounts Facilitating Green Agriculture and Rural Revitalization***

Green finance can effectively drive the rapid development of emerging agricultural practices such as ecological and low-carbon agricultures. In this regard,



the Bank has authored a report titled *Research on Carbon Accounts Facilitating Green Agriculture and Rural Revitalization* where it proposed carbon accounts as an innovative tool in green finance. In the agricultural sector, carbon accounts can efficiently quantify the emissions reduction achieved by agricultural operators through green production practices. Through collaboration between local governments or regulators and financial institutions, coupled with financial product innovations linked to carbon accounts, the adoption of low-carbon production techniques and technology in the agricultural sector can be accelerated. This, in turn, contributes to green agriculture and rural revitalization strategy. In October 2023, the Rural Credit Banks Funds Clearing Center initiated the Rural Credit Banks Cup to collect and select outstanding research papers regarding rural finance. The above research report received the first prize in the competition.

➤ ***Excellent Case Studies on ESG Information Disclosure by Banking Institutions (2023)***

To enhance the level of ESG information disclosure by banks and promote green finance, as the leader of the Green Finance Information Technology Innovation Group, the Bank spearheaded the compilation of the *Excellent Case Studies on ESG Information Disclosure by Banking Institutions (2023)*. This compilation features in-depth analyses of the ESG disclosure practices from numerous banking institutions both domestically and internationally. These cases cover various banking institutions of different types and scales, spanning many aspects of information disclosure including environmental, social, and governance dimensions. Through these cases, this research can serve as a reference and source of inspiration for banking institutions, so as to drive forward the progress of ESG information disclosure.

➤ ***Code for Green Building Industry Loans***

The Bank supports the green and low-carbon transformation of the building industry, particularly in serving Shanghai's high-quality green building sector. Its collaboration with Arcplus Group has resulted in the *Code for Green Building Industry Loans*, which was officially released at the Shanghai Carbon Expo. This code provides standard operational procedures for green building projects to obtain financial support, and defines comprehensive operational methods from application conditions to implementation procedures and guarantees. This initiative aims to

facilitate “green building + green finance” initiatives.

# Section XI Additional Environmental Information

The Bank exerts greater effort into internal promotion of green finance to enhance the awareness of sustainable development among all staff members. It engages in exchanges and cooperation within the green finance community, where advanced practices and achievements in green finance development are explored and green intelligence is pooled. The Bank maintains promoting its green finance brand and actively participates in various exhibitions, expos, and forums related to green finance, contributing its expertise in this regard.

## I. Internal Communication

The Bank cultivates awareness of sustainability among employees through various training sessions, lectures, and thematic events, aiming to enhance their capabilities in green initiatives. The Bank reinforces internal promotion of green operations, and encourages employees to lead by example and fully embrace the low-carbon practices in both work and life.

### **Event: ESG training for directors, supervisors and senior managers**

In 2023, professional third-party organizations were invited to provide specialized training on the *Development, Evolution, and Impact of ESG on the Banking Industry* for directors, supervisors, and senior managers. The training covered four aspects: an overall overview of ESG development, regulatory requirements and investor concerns, the impact on the banking industry, and the role of the Board of Directors. It could assist the Bank in integrating ESG governance with operational management, enhancing sustainable development capabilities, and promoting overall improvements in economic, environmental, and social performance. This reflects the Bank's commitment to green development and social responsibility



ESG training for directors, supervisors, and senior managers

### Event: Thematic Distributed PV sharing

In 2023, the Bank promoted green finance internally through a series of thematic events focusing on green finance initiatives. The first event was a seminar on distributed photovoltaics, where the Bank went to photovoltaic leaders for visit and exchange to gain insights into their core technologies and products in the photovoltaic sector. Following the visit, the Bank shared its insights into green finance business. In a vibrant atmosphere, with passion, personnel across branches engaged in multidimensional discussions and exchanging viewpoints. Through this exchange, participants gained deeper insights into the entire photovoltaic industry, which will contribute to enhancing the Bank's green finance capabilities.



Thematic Distributed PV sharing

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**Event: Thematic low-carbon initiative**

In 2023, the Bank launched the green and low-carbon initiative called No Paper Running to deepen the overall green foundation of the entire organization, drive process optimization and reshaping, reduce office paper consumption, and enhance work efficiency, by calling for action and mobilizing across the entire bank.

- Promoting awareness of conservation and advocating for green practices

Employees should set themselves as examples with firm commitment to energy conservation and awareness of conservation, environmental protection, and ecology. They should strive to be leaders and practitioners of green office and low-carbon lifestyle by reducing paper printing, facilitating paper recycling, and avoiding indiscriminate disposal of single-sided printed paper, and opting for double-sided usage whenever possible. Employees promote the concept of reducing consumption and calling for paperless office to those workmates and opt for a green and low-carbon lifestyle.

- Using online resources to promote paperless office practices

The Bank proposes and take various measures to reduce paper usage or go paperless, and replaces physical paper documents with electronic channels. The online digitization of various meetings has been advanced, which led to a paperless process from agenda approval to minutes distribution; the use of paper approval forms reduced, and online approval processes improved; the frequency of paper-based communications reduced via online methods for document circulation.

## II. External Exchange

In 2023, the Bank visited leading peers in green finance such as Jiangsu Bank and Huzhou Bank, and engaged in exchange and learning initiatives with counterparts in Shanghai. In addition, the Bank actively participated in external exchanges by attending events such as the Green Finance Symposium of United Nations Environment Programme, the closed-door meeting for Principles for Responsible Banking members, the Net-Zero Transformation Seminar, and the 2023 International Forum for China Impact Investing (IFCII). Through these engagements, the Bank learned from advanced models and management experiences in green business development from counterparts in the industry, and broadened its horizons.

In June 2023, the Bank signed a strategic cooperation agreement with Huzhou Bank. Both parties will advance the mutual benefit in the Yangtze River Delta region, in particular in areas such as green finance and rural revitalization. Both parties have

decided to work hand in hand by leveraging each other's strengths to innovate in areas such as green finance, liquidity support, and international business, aiming to achieve more fruitful results.



Signing ceremony between SHRCB and Huzhou Bank

**Event: SHRCB attended the 2023 International Forum for China Impact Investing (IFCII)**

SHRCB participated in the 2023 International Forum for China Impact Investing (IFCII) hosted by the Chinese Academy of Financial Inclusion at Renmin University of China and co-organized by Impact Hub Shanghai. At the forum, as an alliance member, the Bank proposed to create a sustainable financial system supported by green finance. It emphasized the integration of its unique positioning and strengths to fully reflect ESG principles. By focusing on agriculture, technology innovation, and digitalization as part of its overall strategy, the Bank aims to excel in green finance and are committed to becoming a “green rural commercial bank”.





Mr. Gu Jianzhong, president of SHRCB attended the 2023 International Forum for China Impact Investing

### **Event: Attending meetings relating to Principles for Responsible Banking (PRB)**

In October 2022, the Bank joined the United Nations Environment Programme Finance Initiative (UNEP FI), becoming the first commercial bank in Shanghai to commit to the *Principles for Responsible Banking (PRB)*. The Bank fulfilled its responsibilities as a member by participating in the closed-door meetings on the Principles for Responsible Banking and the green finance symposiums organized by the United Nations Environment Programme. At these meetings, best practices in sustainable finance and advanced sustainable development practices from both domestic and international perspectives were shared.

### **III. Branding Effort**

Leveraging major international and domestic events in the green sector as opportunities, the Bank has highlighted its commitment to ecological sustainability, as a part of its effort to promote its green finance brand and showcase its image in green and low-carbon initiatives.

**Event: Unveiled at Shanghai International Carbon Expo**

In June 2023, the first Shanghai International Carbon Expo was held. As China's first expo on the theme of carbon neutrality, it aims to promote the connection and exchange across the entire industry chain, and advance the green and low-carbon development in the economy and society. The Bank participated in the expo under the theme of Low Carbon Services, with its exhibition booth arranged around four sections: strategic planning in green finance, corporate social responsibility initiatives, innovative green financial products and services, and the organizational-level green achievements. This showcased the Bank's significant contributions and advancements in green finance.



SHRCB showed up in Shanghai Carbon Expo

**Event: Active involvement in Shanghai International City and Architecture Expo**

In October to November 2023, the main session of the 2023 Shanghai International Urban and Architectural Expo was held at the Shanghai World Expo Exhibition Center. The theme of this session was Eco-city, Green development. Representatives from various entities shared insights into the cutting-edge trends of green and low-carbon practices in the new era, and discussed the pathways and models for green development under this new situation. As a local corporate bank,

SHRCB hosted an array of forums during this expo under the theme Financial Support for Shanghai's Green, Low-Carbon, and High-Quality Development, which attracted dozens of companies across various sectors including green architecture, energy conservation, environmental protection, and infrastructure construction. At these forums, the Bank shared with participating companies and stakeholders various green urban financial service solutions around water conservation, energy efficiency, and carbon reduction, such as Water Saving Benefit program, tools to support carbon emissions reduction, and financing options for distributed photovoltaic systems. The Bank provided a detailed overview of its Green Finance FPA service system that facilitates the Bank to offer comprehensive financial solutions in both local and foreign currencies, on-balance sheet and off-balance sheet, to elevate the level of green finance services and promote Shanghai's development towards a green, low-carbon, and high-quality future.



### Financial Support for Shanghai's Green, Low-Carbon, and High-Quality Development forums

#### Event: Active involvement in China International Industry Fair

On September 19, 2023, the 23rd China International Industry Fair opened at the National Exhibition and Convention Center. As a local corporate bank and a member of the presidium of the Shanghai Federation of Industrial Economics, the Bank collaborated with several associations including Shanghai AI Industry Association, Shanghai Robot Industry Association, Shanghai Automotive Parts Industry Association, and Shanghai Medical Instrument Trade Association. Together, we they

hosted themed sessions titled Comprehensively Undertaking Industrial Transfer and Jointly Expanding ASEAN Markets for industry-finance cooperation, and Zero-Carbon Technology Revolution Facilitating High-Quality Development of Green Industrial Chains for supply chain matchmaking. At the event, the Bank presented topics on Promoting Growth in the Green Industrial Chain and Finance Serving for Industrial Upgrading. It shared with participating companies and various stakeholders its principles and initiatives in serving the real economy, supporting the transformation and upgrading of manufacturing industries, and advancing the development of green finance.

## Section XII Future Outlook

We will uphold the essence of the Central Financial Work Conference by embracing green finance as a pivotal strategy for both fulfilling the social responsibilities and enhancing economic efficiency. We remain committed to refining our financial service ecosystem supported by green finance to promote sustainable development. We will engage in the entire trajectory of green development within the Yangtze River Delta, aiding Shanghai's aspiration to become an international green finance hub. We will prioritize Shanghai's low-carbon development objectives and strategic roadmap by giving full play to the role of green finance as a pivotal enabler.

We will refine the overarching design of our green finance and fully integrate the development strategy of green finance into our overall strategic framework. We are dedicated to building a comprehensive green finance system around green finance management, investment and financing, and operational aspects. This requires ongoing effort into systems for green finance business management, risk management, and incentive mechanisms. Our focus lies in cultivating distinctive green advantages and a unique brand identity, with the aim of becoming the greenest bank in the Yangtze River Delta region.

We will innovate products and services in green finance, focusing on sustainable development in the Yangtze River Delta region, rural revitalization, and support for small and micro businesses. We will enhance our suite of green finance products and services, and expand channels for financing low-carbon transitions in enterprises. This effort aims to elevate the level of our green finance services, strengthen environmental risk management, advance our own green operations, and leverage financial resources to green finance. By doing so, we will drive the development of new quality productive forces across society, achieve carbon peak and carbon neutrality goals, and contribute to a beautiful China.



# Appendices

## Appendix 1: Basis for quantitative estimation of environmental impacts

### 1. Estimation of emissions of Investing and Financing Activities

SHRCB estimates the carbon emissions of its investment and financing activities based on relevant documents such as the *Guidelines for Carbon Accounting for Financial Institutions* (Trial) (YBF [2021] No. 119), the Partnership for Carbon Accounting Financials (PCAF), and other related guidelines, with extensive reference to Annex the *Guidelines for Calculating Energy Conservation and Emission Reduction for Green Credit Projects* attached to the *Notice on Work of Green Financing Statistical System* (HYBJBT [2020] No. 87), *General Guideline of the Greenhouse Gas Emissions Accounting and Reporting for Industrial Enterprises* (GB/T 32150), the *General Technical Rules for Measurement and Verification of Energy Savings* (GB/T 32045), and *Technical Specification at the Project Level for Assessment of Greenhouse Gas Emission Reductions—General Requirements* (GB/T 33760), and given the pre-loan checks, feasibility studies, energy assessment reports, and environmental impact assessment reports, among other relevant materials.

Specific formula:

$$\text{Carbon emission of loan} = \sum \text{Monthly average balance of loan to enterprise} \times \frac{\text{Enterprise's annual emission}}{\text{Enterprise's total assets}}$$

Where:

1. In terms of data selection, priority is given to data voluntarily disclosed by companies. Where carbon emission data is not disclosed by companies or the data is incomplete, model-calculated data is utilized.

2. SHRCB follows the guidelines of the Partnership for Carbon Accounting Financials (PCAF). For a listed company, the total assets are determined by its



enterprise value, i.e., sum of the capitalization and total liabilities. For a non-listed company, the total assets are determined by its equity and total debts.

3. As of the report release, some of our clients have not yet published their 2023 ESG reports or corporate social responsibility reports. As such, we were unable to obtain the carbon emissions and total assets data for these clients for the year 2023. Therefore, in calculating the 2023 asset carbon emissions, we followed the recommendations of PCAF by utilizing the most recently available data. For some companies, this required using the carbon emissions from 2022 divided by the total assets for 2023 as the most recent available carbon intensity data for calculation.

## 2. Estimation of Environmental Benefits of Green Investment, Investing and Crediting

### 2.1 Estimation of environmental benefits of green credit

In accordance with the requirements outlined in the Annex the *Guidelines for Calculating Energy Conservation and Emission Reduction for Green Credit Projects* attached to the *Notice on Work of Green Financing Statistical System* (HYBJBT [2020] No. 87) as well as other relevant documents, the Bank calculates the environmental benefits generated by on-balance sheet green project loans. Primary data sources include approval documents for green credit projects, energy-saving reports, feasibility studies, environmental impact assessment reports, and project measurement data. The formula is:

$$\begin{aligned} & \text{Annual carbon emission reduction supported by the green project loan} \\ &= \sum \text{annual reduction after green project completion} \\ & \times \frac{\text{Monthly balance of green project loan}}{\text{Total investment into the green projec}} \end{aligned}$$

Where, the annual emission reduction post-construction of the green project is calculated with the following formula, with a renewable energy generation project as an example:

#### (1) Reduction in carbon dioxide emissions

$$CO_2 = w_g \times \alpha_i + Q_g \times b_g \times 10^3 \times 2.21$$

The formula calculates the reduction in carbon dioxide emissions by combining the renewable energy electricity generation with the baseline carbon dioxide emission

factor of the regional electricity grid, as well as the heat supply. where:

$CO_2$  :—The project’s carbon emission reduction (tCO<sub>2</sub>e);

$W_g$  :—The project’s annual electricity supply (MWh);

$\alpha_i$  :—The baseline carbon dioxide emission factor of the regional electricity grid where the project is located (tCO<sub>2</sub>e/MWh). According to UNFCCC’s Tool to Calculate the Emission Factor for an Electricity System (version 5.0),

$\alpha_i = 75\% \times EF_{grid,OM,y} + 25\% \times EF_{grid,BM,y}$  for wind power and PV projects; for other renewable energy generation projects such as hydropower and biomass generation projects,  $\alpha_i := 50\% \times EF_{grid,OM,y} + 50\% \times EF_{grid,BM,y}$ .

$Q_g$  :—The project’s annual heat supply (MGJ); if only electricity generation is provide without heat supply,  $Q_g$  is zero;

$b_g$  :—Average coal consumption for centralized heating boilers nationwide (Kgce/GJ). The default value is 40 Kgce/GJ.

## (2) Energy savings

$$E = W_g \times \beta \times 10 + Q_g \times b_g \times 10^3$$

where:

E—Fossil energy consumption substituted annually (tce/y);

$W_g$ —The project’s annual electricity supply (GWh/y);

$\beta$ —National average coal consumption for thermal power generation in the year of project commissioning (Kgce/kWh). According to the *2022 National Electricity Industry Statistics* released by the National Energy Administration, the standard coal consumption for power plants with a capacity of 6,000 kilowatts and above in 2022 was 0.3015 kgce/kWh.

$Q_g$  :—The project’s annual heat supply (MGJ);

$b_g$  :—Average coal consumption for centralized heating boilers nationwide (Kgce/GJ). The default value is 40 Kgce/GJ. The heat supply value is zero if the project does not supply heat.

### (3) Reduction in sulfur dioxide emissions

$$SO_2 = W_g * E_{SO_2} * 10^{-2}$$

where:

SO<sub>2</sub>—Annual reduction in sulfur dioxide emissions (t/y);

W<sub>g</sub>—The project' substitution of annual electricity generation from thermal plants (GWh/y);

E<sub>SO<sub>2</sub></sub>—Sulfur dioxide emission by unit electricity generation from thermal power plants, the coefficient is 0.101g/kWh according to *2022 National Electricity Industry Development Report*.

### (4) Reduction in nitrogen oxides emissions

$$NO_x = W_g * E_{NO_x} * 10^{-2}$$

where:

NO<sub>x</sub>—Annul reduction in nitrogen oxide emissions (t/y);

W<sub>g</sub>—The project' substitution of annual electricity generation from thermal plants (GWh/y);

E<sub>NO<sub>x</sub></sub>—Nitrogen oxide emission by unit electricity generation from thermal power plants, it is 0.152g/kWh according to *2022 National Electricity Industry Development Report*.

### (5) Reduction in smoke emissions

$$Smoke = W_g * E_{smoke} * 10^{-2}$$

where:

Smoke- Annul reduction in smoke emissions (t/y);

W<sub>g</sub>-- The project' substitution of annual electricity generation from thermal plants (GWh/y);

E<sub>Smoke</sub>—Smoke emission by unit electricity generation from thermal power plants, it is 0.022g/kWh according to *2022 National Electricity Industry Development Report*.

$$Smoke = W_g * E_{smoke} * 10^{-2}$$

## 2.2 Estimation of environmental benefits of green bonds

In accordance with the requirements outlined in the Annex the *Guidelines for*

*Calculating Energy Conservation and Emission Reduction for Green Credit Projects* attached to the *Notice on Work of Green Financing Statistical System* (HYBJBT [2020] No. 87) as well as other relevant documents, the Bank calculated the annual carbon emission reduction benefit supported by its investment in green bonds, by considering the carbon emission data supported by the funds raised through green bonds and the proportion of the Bank's investment in green bonds to the total funds raised through these bonds. The formula is:

$$\begin{aligned} & \text{Annual carbon emission reduction supported by green bond investment} \\ &= \sum \text{annual emission reduction supported by funds raised via green bond} \\ & \quad \times \frac{\text{face value of green bond investment}}{\text{Total amount raised via green bond}} \end{aligned}$$

Where

*Annual carbon emission reduction supported by green bond investment* is from publicly available green bond assessment reports certified by third-party agencies.

### 3. Estimation of Carbon Emissions of Operating Activities

SHRCB estimates the greenhouse gas emissions of its operating activities based on carbon emission factors for various energy consumption categories, and in accordance with requirements including the *Guidelines for Carbon Accounting for Financial Institutions (Trial)* (YBF [2021] No. 119) and *General Guideline of the Greenhouse Gas Emissions Accounting and Reporting for Industrial Enterprises* (GB/T 32150).

Carbon emissions of operating activities cover scope I, scope II and scope III emissions and their formulas are:

#### Scope I:

$$E_{\text{Combustion}} = \sum_{i=1}^n (AD_i \times EF_i)$$

where:

$E_{\text{Combustion}}$ —The carbon dioxide emissions generated from the combustion of fossil fuels consumed during the accounting period (tCO<sub>2</sub>);

$AD_i$ —The activity data for the i-th type of fuel consumed during the accounting period (GJ);

$EF_i$ —The carbon dioxide emission factor of i-th type of fuel (tCO<sub>2</sub>/GJ);

i—The code of the fossil fuel type.

**Scope II:**

$$E_{\text{Purchased electricity}} = AD_{\text{Purchased electricity}} \times EF_{\text{Electricity}}$$

where:

$E_{\text{Purchased electricity}}$ —The carbon dioxide emissions generated from the electricity purchased (tCO<sub>2</sub>);

$AD_{\text{Purchased electricity}}$ —The electricity purchased during the accounting period (MWh);

$EF_{\text{Electricity}}$ —The carbon dioxide emission factor of electricity (tCO<sub>2</sub>/MWh);

**Scope III:**

$$E_{\text{Scope III}} = AD_{\text{Scope III}} \times EF_{\text{Scope III}}$$

where:

$E_{\text{Scope III}}$ —The carbon dioxide emissions generated from scope III activities such as goods purchase, employee commuting, and waste disposal (tCO<sub>2</sub>);

$AD_{\text{Scope III}}$ —Activity level for scope III with the unit depending on the specific activity type;

$EF_{\text{Scope III}}$ —Carbon dioxide emission factor for scope III.

Greenhouse gas type	Greenhouse gas source	Basis for calculating the greenhouse gas emission factor
Scope I	Natural gas	<i>Guidelines for Accounting and Reporting Greenhouse Gas Emissions by Public Building Operators (Trial)</i>
	Petroleum	
	Diesel	
Scope II	Electricity	<i>Notice on Management of Greenhouse Gas Emission Reporting by Power Generation Enterprises for the Period 2023-2025 (HBQHH [2023] No.43).</i>
Scope III	Paper	<i>China Greenhouse Gas Emission Coefficient Library for Product Life Cycle (2022)</i>
	Water	
	Kitchen waste	
	Electronic and office supplies	
	Business trips	

## Appendix II: Index Catalog of Guidelines for Environmental Information Disclosure of Financial Institutions

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