

Financing for a Greener Supply Chain

金融支持供应链绿色化

Green Investment Principles for
the Belt and Road
November 2021

“一带一路”绿色投资原则
2021年11月

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Background

On November 30th, 2018, the Green Investment Principles for Belt and Road (GIP) was launched jointly by China Green Finance Committee and the City of London, in which Principle 6 stated that “ESG factors should be incorporated into supply chain management, utilizing international best practices in investment, procurement and operations relating to supply chain management”.

The GIP has grown rapidly to an international network of 40 signatory institutions and 12 supporting institutions, most of which are large financial institutions and the total assets held or managed by these members exceeded USD 49 trillion. As the membership and their operations along the Belt and Road grows, especially against the unparalleled challenge from the global pandemic, it is getting increasingly important for stakeholders involved in the Belt and Road investments to have a closer look at their supply chain and incorporate more sustainability factors. Financial institutions were also found vulnerable in many cases when their major clients are affected in supply chain under various circumstances. To further investigate how supply chain risks, especially those stemming from climate and environmental risks, might impact financial institutions and what could be done to manage these risks, the GIP Secretariat organized some of the GIP members to review the development of green finance and its adoption in the management of supply chains, and success stories by various stakeholders, especially financial institutions.

This report is supported by the GIP Secretariat and led by APEC Cooperation Network on Green Supply Chain (Tianjin) Pilot Center. With the input from many GIP-affiliated as well as external experts, it identifies the current situation, challenges and trends of green financial products to support greening the supply chain in countries along the Belt and Road. It also collected a number of demonstration cases and put forward policy recommendations.

1. Benefits and Opportunity

1.1 Overview

Environmental problems, food and other resource shortages and related security and public health issues, have resulted in pressure on leading multinational businesses to make changes in procurement practices by incorporating more sustainability factors, such as creating a green /sustainable supply chain (GSC).

GSC requires that environmental impacts are minimized throughout the life cycle of the products, including their design, purchase, manufacture, packaging, distribution, consumption and recycling, while the efficiency of energy, land, water and forest, and other resource utilization is maximized, resulting in both environmental and economic benefits. GSC depends on, but can also be the impetus to, coordinated efforts made by companies in the supply chain from upstream to downstream. The Environment, Social, Corporate (ESG) performance of not only core enterprises (or buyers), but also that of suppliers (sellers), can be managed, evaluated, improved, and aligned via sound supply chain management.

To mitigate this risk, it is critical to create a platform to raise the awareness of the suppliers' market, across all industries relevant to infrastructure investments

along the Belt and Road, on the benefits of greener, more energy- and resource-efficient, and higher quality production. Many APEC economies have launched their GSC target and incentive policies by introduction of green public procurement, green consumption, eco-labelling and green financing. In October 2014, the 22nd Leaders' Declaration endorsed the establishment of APEC Green Supply Chain Network and its first pilot center in Tianjin, China to promote green growth collaboration and supply connectivity by introduction of GSC.

1.2 Opportunities and risk management

Huge potential for investments and opportunities for supply chain cost savings

By introduction of GSC management, economic performance of a supply chain, on average, can be improved by at least 10%, according to the American Chamber of Commerce in China. It has been reported that the cost of recycling products may be 40%-65% less under the GSC model and that energy consumption could be reduced by 85%¹. 434 million tons of carbon reduction (an amount larger than the entire carbon emissions in 2014 in France) resulted in \$12.4 billion of cost savings by the joint efforts of 89

Carbon Disclosure Project (CDP) members including Microsoft, BMW, Wal-Mart and Pepsi-Cola and a few other leading enterprises in 2016².

It is reported by the most recent joint CDP/Institute of Public and Environmental Affairs SCTI Index that the overall direct carbon emissions generated from the supply chains are on average 5.5 times of those generated by these core enterprises³. Yet only 23% of the core enterprises who replied to the CDP declared that they had entered into climate change collaboration with their suppliers and only 4% of the suppliers have set up their own emission reduction targets⁴. It shows that a large percentage of enterprises alongside global supply chains have not yet incorporated climate considerations into their business strategy and there is a huge potential for investments and opportunities for cost savings.

Tens of billions of dollars for financing cost savings

It has been estimated that the global accounts receivable (A/R) market value is around US 20 trillion dollars, with at least 10% of this amount being considered “bankable” (banks willing to provide lower-cost finance due to higher credit rating than the suppliers themselves).

The key number, however, is that perhaps 1/3 of this value has been estimated to be amenable to enhanced “green” conditions. In other words, there is US 700 billion dollars (and growing) of untapped, A/R-based green finance opportunities in the world, much of which is in China and other markets along the Belt and Road. If, as has been estimated, 100 basis points per 90 days in financing costs for suppliers could be reduced by complying with lenders’/anchor buyers’ green criteria, the annual cost savings in reduced interest just in the receivables-based financing market would be measured in tens of billions of dollars.

GSC addresses ESG risk contagion alongside supply chain. Upstream ESG risks at the supplier level can transmit all the way downstream, from “anchor” buyers, project sponsors and State-Owned Enterprises (SOEs), to financing parties and consumers. This transmission of ESG risks can cause serious economic losses in the form of operational delay, user dissatisfaction, and even boycotts, as well as litigation, credit ratings downgrades and systematic defaults, which will ultimately transmit to the banking system.

1. Carbon Trust et al., Supporting Excellence in UK Remanufacturing, 2014.

2. Institute of Public and Environmental Affairs, Green Supply Chain 2019--CITI Evaluation Annual Report, 2019.

3. Institute of Public and Environmental Affairs & CDP, Supply Chain Climate Action SCTI Index 2019, 2019.

4. Carbon Trust, Big Buyers Harness the Power of Purchasing to Deliver Emissions Reductions in the Supply Chain, 2017.

2. Huge demand potential for GSC Finance along the Belt and Road

It is estimated that the global demand for **infrastructure investment** will be \$94 trillion in 2016-2040⁵, most of which are from the Belt and Road. Energy investment has been one of the top priorities for the Belt and Road countries and **new energy investment**, including wind, solar and nuclear energy projects, could account for up to 90% of the total power projects newly installed. With the development of new technology, the cost of renewable energy has become more and more competitive. The ESG risks arising from traditional fossil fuel have expanded dramatically, which has led to significant financial risks in turn.

GSC finance has ushered in a systematic approach to the measurement and reduction of carbon-intensive production processes, which is crucial for many Belt and Road countries that have historically been forced to make trade-offs between the environment and development of their agrarian economies. First, GSC finance has stimulated the greening of design, material manufacture and recycling of products in new energy projects. Second, GSC finance has contributed to food security and sustainable rural development where **agriculture** is cornerstone industry for a large percentage of countries along the Belt and Road.

5. Global Infrastructure Hub, Global Infrastructure Outlook -- Infrastructure investment Needs: 50 Countries, 7 Sectors to 2040, 2017.

3. Case Studies

3.1 HSBC

In 2019, HSBC was active in three areas of green lending and deposit-taking: it launched a sustainable supply chain finance program, expanded the bank's green and sustainable loan programs and introduced "green deposits" for corporate and institutional customers. The sustainable GSC program is innovative in both granular and holistic ways. It is granular because it tiers the attractiveness of pricing and other financing terms depending on the measurable degree of conformity to green standards by suppliers. Instead of simply stipulating a "one-time" use of proceeds covenant, it applies continuous and firm-wide pressure on clients to behave in ways that make daily compliance with green standards in its daily operations. Most importantly, while HSBC's role is to disburse cash to suppliers earlier than they could otherwise obtain cash, so long as the suppliers comply with their green pricing conditions and report regularly on status to HSBC, it is the client (e.g. Walmart) whose relationships with suppliers allow Walmart to set the rules and "keep score" and thus enable all participants to align interests.

This type of tiered structure is similar to sustainability-linked loans (or sometimes termed as ESG margin-linked loans), which aims to incentivize behavioral

change and continuous improvements, also to achieve a multiplier effect in an "anchor buyer"'s supplier base. There are no stipulations regarding 'use of proceeds' (i.e. the funds are disbursed directly to the suppliers) and it's not operationally feasible to verify the end use of such flow-based working capital.

The judgments and triggers for cheaper borrowing are linked to client-owned sustainability metrics of supplier performance.

Wal-Mart

Deal highlights

A global Sustainable Supply Chain Finance (Sustainable SCF) program to support Walmart's sustainability initiatives.

The client

Walmart is an international retailer and operates a chain of discount department stores and warehouse stores serving more than 100m customers each week.

Client need

- Have a bank provide tiered pricing to Walmart's suppliers to drive their achievement of certain sustainability goals as part of Walmart's "Project Gigaton" and Sustainability Index scorecard program

- ✓ Project Gigaton - a Walmart initiative

to remove one billion metric tons of greenhouse gases from the global supply chain by 2030.

- ✓ Sustainability Index scorecard program — scorecards that help Walmart benchmark suppliers and encourage continuous improvement in meeting sustainability objectives. These are provided by The Sustainability Consortium (“TSC”).

- Have a bank establish and manage a supplier financing program linked to and aligned with the suppliers’ rankings in the Sustainability Index scorecard.
- Support supplier communications and provision of information relating to Sustainable SCF features and benefits.

The solution

- Global Sustainable SCF program hubbed in Hong Kong, allowing suppliers who demonstrate meeting relevant sustainability criteria to apply for financing rates that take account of meeting such criteria, based on a sustainability rating framework by Walmart and TSC.
- Tiered Sustainable SCF pricing model suppliers’ sustainability ratings, and based on Walmart’s credit relationship with HSBC.
- The Sustainable SCF program is potentially open to all suppliers (excluding Bangladesh) of Walmart.

3.2 Standard Chartered Bank

3.2.1 Overview

Standard Chartered Bank (SCB) is active

in 37 countries that receive official development assistance, including 11 of the least developed countries.

SCB has set a target of financing 10,000 of their clients’ international and domestic supply chains in four years commencing 2020.

3.2.2 GSC financing of global athletic footwear company

Customer challenges and needs

The customer is a multinational corporation that designs and manufactures athletic and casual footwear, apparel and accessories. Its supply chains have become increasingly complex over recent years as production opportunities in lower cost economies of Southeast Asia and Africa emerge and patterns of global demand evolve, especially clothing manufacture which is an industry with a highly diversified supply chain that sources products or components across many geographies. In such environment of both complexity and opportunity, companies need to respond quickly to the demands of an evolving marketplace, they also need to respond to the public requirement for the brand’s responsibility to the environment along with their supply chain.

Large buyers often struggle to maintain reliable and stable procurement channels to allow a robust and resilient supply chain so that their production schedules are not disrupted. Suppliers need earlier payments due to their limited availability of working capital and high borrowing cost. Availability of affordable credit is always a challenge for the smaller

suppliers as increased levels of collateral are demanded by banks to support their rising demand for working capital. The green requirement adds further burdens and challenges to the supplier.

SCB's solution

SCB offers a Vendor Pre-Pay facility to its clients' suppliers, allowing selected suppliers to sell their trade receivables from invoices against a buyer who is the anchor client of the bank. By doing so, the supplier benefits from receiving early payments right after issuing the invoice at attractive interest rates, at up to 70% of the purchase order amount, and without the need to draw down on their credit lines with local banks. The pricing offered to Puma's suppliers within the VPP program is based on their sustainability score.

In turn, through SCB's Receivable Services program, suppliers can submit invoices to SCB along with a request for discounting. SCB gives a discount of 100% of the invoiced amount to liquidate the outstanding pre-shipment loan and pays the residual amount to the supplier. Applicable charges are deducted as agreed upon.

3.2.3 Sustainability financing to the Lower Tiers of the Supply Chain

Traditional supply chain financing supports only the first tier of suppliers, and the second tier suppliers would require a separate SCF program with the first tier supplier as the Anchor (Buyer). Today's supply chain, especially for

multinational corporations, is far more complex than just a one tier buyer-supplier relationship.

In 2019, SCB made a strategic investment into Linklogis, China's leading Blockchain-based supply chain financing platform. By leveraging Linklogis' technology and expertise, SCB provides large corporate buyers with greater visibility and transparency into their extensive network of suppliers, optimizes procurement terms across the supply chain including tiers of upstream suppliers and lowers financing costs, to improve trade/payment terms across the entire supply chain and provide flexible integration with procurement and finance functions within organizations.

3.3 Habib Bank Limited

3.3.1 Sustainable supply chain model for agriculture

Agriculture sector is the foundation of Pakistan's economy. Agricultural development is vital to Pakistan's food security and economic prosperity. Agricultural and supply chain SMEs have insufficient financing support, low production efficiency and insufficient sales capacity.

As the largest commercial bank in Pakistan, Habib Bank Limited (HBL) has developed a sustainable agricultural supply chain model that considers how to improve efficiency from both the production side and the sales sides, and strengthens financing support for agriculture and SMEs. The relevant costs are included in the loan cost.

- Production side

Agricultural advisory - supported by the internal agricultural expert team of HBL

Agricultural inputs - directly provided by external suppliers of HBL

Agricultural mechanizations - leased by external suppliers of HBL

- Sales side

HBL helps farmers and buyers to directly contact and trade, which optimizes prices, avoid intermediary fees, and improve farmers' net cash flow.

Advantages of Habib Bank

- ✓ HBL's in-house team of Agronomists
- ✓ Price advantage brought by competitive external suppliers and centralized procurement
- ✓ Efficient production and sales mechanism: Most buyers are existing customers of Habib Bank, whose creditworthiness is guaranteed, and the payment is easy to monitor

3.3.2 Success stories

- Depalpur of Okara: Corn Financing Support Project

Highlights of the Deal

- ✓ A total of five farmers participated in the pilot
- ✓ To provide farmers with high-quality agricultural machines for free
- ✓ Provide rental agricultural machinery: tractor (John Deere brand), soil preparation machine (LEMKEN

brand), precise seeder (Monosem brand)

Results

- ✓ Break through the original financing guarantee framework and provide loans to one of the farmers
- ✓ The land-holding of farmers has generally expanded (11.5 acres to 40 acres)
- ✓ The farmers financed by HBL had an average increase of more than 10% in production
- ✓ The net increase in farmer's income reached 46%
- ✓ HBL made an average spread of 6%, with a 100% recovery rate
- Eminabad of Gujranwala: pilot on rice (in progress)

Highlights of the Deal

- ✓ A total of 11 farmers participated in the pilot
- ✓ Total subsidized area is 377 acres
- ✓ To provide farmers with high-quality agricultural products that meet international standards
- ✓ Provide rental of agricultural machinery: field preparation machine and rice transplanter (Kubota brand), a few months later the same brand of rice cutter

3.3.3 Independent Appraisal

HBL hired Princeton University as an independent third-party investigator, to conduct an independent assessment of

the impact of such financing support on farmers' productivity and income.

3.3.4 Next Step

The HBL will work with development banks and leading enterprises in agricultural machinery, equipment, plantation, production increase, and deep processing, to jointly create green agriculture and sustainable development demonstration projects along the "Belt and Road".

3.4 Agricultural Development Bank of China

3.4.1 Financing Support Model for Agricultural GSC

This model selects the leading grain enterprises recognized by the State Grain Administration as key support targets, to incubate the integrated GSC model of "production, purchase, storage and distribution", and supports core enterprises in the green supply chain with loans, to prompt green development of the upstream and downstream of agricultural industry chain.

Relying on green supply chain to provide green financing for all aspects of agriculture

- ✓ Priority and preferential development loans for wheat purchase
- ✓ Land scale operation loan
- ✓ Construction loan for high-quality grain recycling ecological base
- ✓ Credit guarantee insurance loan

- ✓ Support the development of contract agriculture, with the provision of free seeds, seeding, sowing and harvesting, as well as purchase at a higher price
- ✓ "Five-stage unified management": unified seed supply, fertilization, harvesting, guidance, and purchase, with streamlined management to reduce costs and improving efficiency

3.4.2 Successful cases

Binzhou Zhongyu is a key demonstration enterprise for high-quality grain projects, certified by the State Grain Administration. The Agricultural Development Bank of China has helped Binzhou Zhongyu build an agricultural green supply chain with a series of green financing support.

It is the core enterprise of the agricultural green supply chain that combines crop planting, processing, breeding and waste utilization:

- ✓ 65,000 mu (Chinese acre) standard high-quality wheat breeding base
- ✓ 1.05 million mu of planting site for order-oriented production, with an annual output of more than 500,000 tons of wheat
- ✓ Green processing with extreme high utilization that covers the processing of flour, deep processing of wheat such as alcohol and liquid protein feed, food processing such as bread and cakes, and frozen food

- ✓ Ecological breeding site that turns waste into treasure. 300,000 pigs are sold annually. The distiller's grains produced in the processing line are used to make mixed feed. The pork produced is of high quality, and the gross profit of sales is 6% higher than that of the same industry
- ✓ Renewable Energy Utilization. A biogas power station with a capacity of 35 kwh/year has been designed and built. The biogas is converted into electricity and heat energy from waste liquids of processing and manure of breeding. The biogas liquid is used as organic fertilizer which returns to the planting site for fertilization, and biogas generates 4,000 kwh of electricity per hour, saving 20 million yuan in electricity bills annually.

Deal highlights

- ✓ Accumulatively amount of 80 million yuan in rural land transfer and operation loans
- ✓ Wheat purchase loan. Free sowing, harvesting and guidance, plus a 15 percent mark-up to the market rate to purchase grains, have increased the income of local farmers by about 340 yuan per mu, bringing the additional annual income of surrounding farmers up to 510 million yuan
- ✓ Construction loan for high quality wheat recycling ecological site
- ✓ Credit guarantee insurance loan

3.5 Innovative Financing for Green Supply Chain: Tianjin Binhai Rural Commercial Bank Corporation

Tianjin Binhai Rural Commercial Bank Corporation ("Binhai Rural Commercial Bank") anchors on serving small and medium-sized enterprises and actively develops green finance. It continuously adjusts and optimizes the allocation of credit resources, leveraging on green loans to support environmentally friendly and low-carbon enterprises, while exploring innovative options of supply chain-based green financing to support the coordinated emission reduction along the supply chain.

Tianjin New Lizhong Alloy Group: Secondary Aluminum Recycling Financing Project

Transaction Highlights

Innovative financial products were developed to support the supply chain of traditional industries to collectively reach carbon neutrality: with green supply chain evaluation from third-party certifiers, green credit facilities were provided to support the recycling of secondary aluminum resources, and promote green supply chain in the traditional non-ferrous metal processing industry.

Customer

Tianjin New Lizhong Alloy Group ("Lizhong Alloy") is a leading manufacturer of cast aluminum alloy ingots, aluminum alloy liquid, and secondary aluminum in China. In 2019,

Lizhong Alloy was selected as a green supply chain management demonstration enterprise and a green manufacturing system solution provider (for its integrated resource utilization system of high-value waste products) by the Ministry of Industry and Information Technology.

The utilization of secondary aluminum is an important focusing area for the non-ferrous metal industry towards carbon peak and carbon neutrality. Each ton of secondary aluminum saves about 3443 kilograms of standard coal, 13,000 kilowatt-hours of electricity and 22 cubic meters of water. Lizhong Alloy established the industry's first research center of aluminum-containing waste recycling engineering, and, in conjunction with well-known universities at home and abroad, it undertook the national special project of international cooperation, "Research on high-quality green recycling of impurity elements of waste and miscellaneous aluminum and its benefits". It yielded fruitful results and built a production base for secondary aluminum alloy, demonstrating its leadership in the industrialization of cutting-edge technology.

Lizhong Alloy established Wuyibao (Tianjin) Energy Technology Co., Ltd. ("Project Company") to build a renewable resource trading platform ("Wuyibao") based on an "Internet + Recycling" model, to standardize the recycling process of waste and miscellaneous aluminum. It leveraged the preferential policies of China (Tianjin) Pilot Free Trade Zone to solve the invoicing problem. It expanded its channels and scale of

recycling, acquired scattered waste and miscellaneous aluminum products across the country, and established a green recycling system between upstream suppliers and downstream customers, converting recycled waste and miscellaneous aluminum and production waste into raw materials for secondary aluminum production, forming a closed-loop green supply chain of "resources-products-waste-recycled resources".

Customer demand

According to the Green Industry Catalog and other regulations issued by the National Development and Reform Commission in 2019, recycling of waste metal and other resource qualifies as green industry and should be supported. The traditional non-ferrous metal processing industry, due to its levels of pollutant discharge and energy consumption, however, is not an industry to be given priority support by national agencies and finance sector.

The main business of Lizhong Alloy covers not only the traditional non-ferrous metal processing industry, but also recycling of aluminum-containing waste. It needs preferential financing facilities to continuously support the increase of recycled aluminum in the proportion of raw materials, to cut down energy consumption and emission, and optimizes the overall performance of the supply chain in environment, resource utilization, and production.

Wuyibao is responsible for the recycling of waste and miscellaneous aluminum, and is in urgent need of financing to

expand the purchase scale to ensure the supply of recycled aluminum raw materials.

Financing support from Binhai Rural Commercial Bank

- The bank supported Lizhong Alloy to build a two-way green supply chain for the aluminum alloy industry, particularly the recycling of aluminum-containing waste, and explicitly included Lizhong Alloy as a green and encouraged industry to support.
- The bank grasped precisely the internal logic of the green supply chain for recycled aluminum, created a customized financing plan, and provide a 10-million yuan loan for Lizhong Alloy's Wuyibao recycling platform through the project company, as a working capital loan to support recycling of waste aluminum.
- Consideration is given to the company's average billing period of 45 days, the average price of waste aluminum of 20,000 yuan per ton, and the annual reduction of carbon emissions by approximately 5,600 tons through recycling. The bank explored cooperation mechanisms, introduced cutting-edge digital technologies to record the carbon emission reductions, other major pollutant reduction and resource conservation supported by financing, while further exploring innovative options for carbon finance along the supply chain .
- Summarize the experience of this project, form a green supply chain financial innovation service plan, and gradually promote and expand the scale.

3.6. Guangzhou automobile GSC financial innovation policy demonstration

Guangzhou is one of the first batch of national-level green finance reform and innovation pilot zones and an important automobile industry base in China, gathering more than 1200 car and auto parts enterprises. Guangzhou takes the lead in promoting the demonstration of green supply chain policy for automobile industry in the Greater Bay Area.

Green supply chain financing model

Based on the National Green Industry Guidance Catalogue, which formulates the GSC evaluation system, Guangzhou develops a green supply chain evaluation system for vehicle manufacturing enterprises, so that financial institutions can provide green financial services to both upstream and downstream of vehicle manufacturers based on the whitelist issued by the guidelines. Local special fund for green finance will provide subsidies to suppliers, and the central bank's special monetary policy will reduce financing interest rates to financial institutions.

Issue policies

"Guidelines for GSC Financial Services in the Greater Bay Area" (the "Guidelines") is issued in July 2020 by the Guangzhou branch of the People's Bank of China and the China Green Finance Committee.

Successful cases

The case of Guangqi Honda

- ✓ As a core enterprise of the supply chain, Guangqi Honda refers to the

"Guidelines" to evaluate suppliers' green attributes, and establishes a white list for the reference of financial institutions to provide green supply chain finance services to the upstream and downstream enterprises of Guangqi Honda

- ✓ Participating financial institutions: Bank of China, China Construction Bank, Industrial Bank, Bank of Guangzhou
- ✓ Financing features: The combination of green and supply chain finance has significantly reduced corporate financing costs
- ✓ Basic financial products: loans and notes based on accounts receivables, warehouse receipts, and accounts payables, etc.

3.7. Case: Belt and Road sustainable infrastructure financing

To respond to global concerns about sustainable infrastructure, help Chinese international contracting enterprises deal with ESG risks and secure green financial support, the China International Contractors Association published "the Guidelines for Chinese Enterprises' Overseas Sustainable Infrastructure Projects", which has helped launch total 37 demonstration projects selected in 2017 and 2019.

3.7.1. Expansion and renovation of Eyadéma International Airport, Togo

The project was jointly undertaken by the China Airport Construction Group and

the Weihai International Economic and Technical Cooperative Co., Ltd., with US \$150 million in concessional loan and buyer's credit from the Export-Import Bank of China.

- ✓ Green procurement. ESG is used as one of the KPIs for supplier selection, evaluation and ongoing collaboration, including but not limited to ISO 14000-certified subcontractors and material and equipment suppliers. To support the development of local small and medium-sized enterprise suppliers, cement was purchased locally to reduce carbon emissions related to logistics. Through green procurement mechanisms, it also drives local suppliers to improve their green environmental performance and reduce environmental risks, with the provision of technology and management guidance.
- ✓ Supplier Green Management. All suppliers are required to sign and submit environmental declaration forms and social responsibility commitment letters to enhance the awareness of and capacity in social responsibility along the supply chain, conduct green operations and sustainable use of resources, and build green projects. Environmental safety education is provided to subcontractors.
- ✓ Waste management and control. It formulated and issued the "Environmental and Safety Declaration Form of Related Parties"

to regulate the behavior of suppliers in the management of waste water, gas and residues.

3.7.2. KE Airport highway, Uganda

The project was undertaken by the China First Highway Engineering Company, with a total investment of US\$ 476 million, of which a US\$ 350 million loan facility with a grace period of 5-years is from the Export-Import Bank of China at an annual interest rate of 2% and repayable over a 25-year period.

- ✓ Green procurement. Priority is given to the procurement of green and eco-friendly materials, with requirements to present certification for quality and eco-friendliness, as well as quality tests depending on the situation. Long-term cooperative relationships were established with suppliers of good environmental performance.
- ✓ Supplier green management. Social responsibility goals were put forward, requiring suppliers to actively perform social responsibilities and protect the environment. It also helped suppliers improve the level of production techniques and environmental performance
- ✓ Establish a governance mechanism and formulate standardized processes

3.7.3. Angren-Pap Railway Tunnel Project, Uzbekistan

The total investment for the project is US\$ 455 million, of which US\$105 million

is provided locally and US\$ 350 million is concessional loans from the Export-Import Bank of China. The entire project has a length of 169 kilometers, of which the tunnel project is the master project of the most importance.

- ✓ Green procurement. Selection of suppliers is stringent. Materials and services related to environmental protection are required to meet local environmental standards
- ✓ Green construction and recycling. Based on the rationale of building the tunnel with what was excavated, a sand and gravel production site was built. 98% of the sand and gravel materials needed for the tunnel are taken from the slag generated by the tunnel excavation. The bulk cement tanks of the five concrete mixing stations are all used ones from the previous projects

3.7.4. The Karot hydropower project in Pakistan

It is the fifth largest hydropower station of Pakistan, with a total investment of US\$ 1.74 billion, financed and constructed in the BOOT mode by the China Three Gorges International Corporation. The financing of \$1.4 billion was provided by the Export-Import Bank of China, the China Development Bank, the IFC and the Silk Road Fund through syndicated loans. The closure of international syndicated financing was completed in three and a half years. It is the largest single project invested by IFC in countries along “the Belt and Road” so far.

- ✓ Making full use of international experience of IFC to manage ESG risks
- ✓ Emphasis was put on communication and coordination with all stakeholders on ESG issues, promoting the alignment of local environmental regulations and standards with Chinese standards
- ✓ Explore green purchasing. The main equipment is manufactured by Chinese manufacturers, with “Made in China” equipment equivalent to US\$ 338 million from 29 state-owned enterprises.

4. Challenges

4.1 GSC is still at an early stage of development. Both market practice and a fundamental system of green measurement and pricing principles for GSC are still in the early stage, so that technical and commercial obstacles remain for financial institutions and product innovation.

4.2 Lack of comprehensive regulatory design and policy incentives. As a market-driven innovative mechanism, GSC worked principally through expanding concentrated procurement of core enterprises to upstream suppliers. How to support GSC development by the force of administrative measures is still under discussion. There is no clear and stable policy framework to create compliance pressures and policy incentives for the financial sector to support GSC development.

4.3 Insufficient communication among financial and industry sectors, public and private sectors. Dialogue and collaboration arrangements have not yet been established to create decision-making with respect to GSC finance activities and product innovation across financial and industry sectors, both public and private.

4.4 Lack of vertical motivation from upstream to downstream. As manufacturing and final consumption (and all the logistics in between) are often done in multiple jurisdictions, it is a labor-intensive effort from upstream to downstream to align interests, gather and monitor information, build trust among parties across different legal regimes, and scale up financing. To add another layer of due diligence—green requirements—will need motivation of one or more

parties in the chain as well as incentives. But such motivation and incentives are far from ready.

4.5 Lack of integrated GSC standards, management tools and KPI. Although a few criteria and guidelines on GSC have been launched by the private sector, commonly recognized GSC standards are far from developed. There are different green standards among large buyers/sponsors and governments. It is difficult to compare green standards due to variations in processes and products involved in supply, manufacturing and delivery in different industries. In the absence of common standards, measuring tools, and third party “green rating” agencies, it is time- and cost-consuming for financial institutions to identify “green” standards on their own and to provide favorable financial facilities accordingly.

4.6 Lack of ESG data and tracking system. ESG information disclosure

responsibilities undertaken by a core enterprise in pursuit of a GSC are significantly increased compared to other enterprises. It needs to collect not only its own information, but also that of its suppliers at different levels. Lack of adequate data and track records about climate-related metrics and methodologies makes it difficult for financial institutions to assess the climate impact for a single sector or asset class. Hence, challenges emerge when integrating climate-related risks and opportunities into financing and portfolio management.

4.7 Conflict of laws. There are wide variations in legal, accounting, tax, creditors’ rights and contracts for financing supply chain projects, especially among jurisdictions along the Belt and Road. Without analysis, surprises and losses can occur due to different results in different jurisdictions.

5. Suggestions and Recommendations

5.1 Accelerate policy design. It is essential to raise awareness of the significance and potential of GSC finance and promote policy design on GSC and encourage financing innovations. Using the “stick” of regulation and the “carrot” of subsidies, government procurement, grants and concessions, tax incentives and regulatory capital relief, administrative action can accelerate the development of the GSC financing market. Financial regulators shall involve financing facilities related to GSC into their statistical assessment system for green financing with the purpose of compliance and provision of incentives, which may include financial support for Green Procurement, Green Products and GSC enterprises, with the adoption of preferential interest rate policy in order to stimulate financial institutions to provide favorable financing facilities.

5.2 Promote cross-sectoral GSC collaboration and stimulate green procurement and consumption by key players. Explore GSC financing innovations for sustainable infrastructure projects along the Belt and Road to expand funding to those who undertake green procurement and other GSC management. Two types of players shall be most encouraged to implement green procurement and consumption. First, the

most sophisticated and powerful “anchor buyers” particularly in more urbanized sectors. Second, SOEs, project sponsors/ government and multilateral agencies.

5.3 Promote collaborations on standards and third-party services.

Support the development of applicable standards and KPIs of GSC and enhance the integration and coordination with the existing standards of green products; actively promote GSC evaluation and other third-party services in order to provide fundamental support for GSC finance.

5.4 Incorporate GSC into the product system and decision-making of financial institutions.

Introduce GSC values and considerations to financial institutions, including produce system and decision making. Large financial institutions shall promote GSC-friendly financing tools in the existing supply chain financial products, such as products based on A/R, provide differentiated financing support to incentivize suppliers to enhance their green performance, and penetrate to upstream suppliers.

5.5 Introduce digital technology to promote disclosure and ESG information collection.

Consolidate the application of technologies in block chain,

industrial Internet, IOT and big data to promote disclosure and more efficient collection of ESG information along the supply chain, and ultimately improve efficiency by reducing financing costs.

5.6 Enhance international collaboration and capability building. GIP and other international initiatives shall take the lead to promote cross-border and cross-industry dialogue and collaboration – public and private – on GSC issues, including the integration and coordination

of GSC-related regulations and standards, the promotion and capability building of cross-disciplinary theories and case studies through trainings and seminars, and the demonstration projects.

5.7 Support the development of GSC in agriculture, through the construction of sustainable farming industrial zones along the Belt and Road, to promote cross-border trade of green products to stimulate sustainable development in rural areas.

Acknowledgments

This report is prepared by the APEC Cooperation Network on Green Supply Chain (Tianjin) Pilot Center with sponsorship from the GIP secretariat and input from experts from within and outside of the GIP.

We would like to thank for the outstanding contributions and cases provided by: Mr. Zhao Lijian, Dr. Li Jing, Ms. Huang Yiwen, Mr. Shi Chaohui, Ms. Tan Lulu, Ms. Cheng Wei, Mr. Chen Yulin, Ms. Wang Huayi, Ms. Yang Fei, Mr. Yang Fubin, Mr. Zuo Zhicheng.

GIP Secretariat is also grateful for the suggestions and comments provided by: Ms. Yin Hong, Ms. Chen Yaqin, Ms. Fan Binbin, Mr. Zheng Qiao, Ms. Guo Xiaofei, Ms. Cao Yanan, Mr. Lucas Fu, Ms. Hao Mingchun, Ms. Li Xiaozhen (Paulson Institute), Ms. Song Sha, Ms. Zhou Ran, Ms. Xu Dan, Mr. Zhang Zhiyi, Mr. Li Tian, Mr. Zhang Shun, Mr. Chen Jun, Ms. Ma Xinyue, and many others.

We are especially grateful to Mr. Fred Chang for his professional guidance and selfless help.

Ms. Mu Lingling, Ms. Ma Yingfang and Mr. Chen Jianwei from APEC Cooperation Network on Green Supply Chain (Tianjin) Pilot Center participated in the research and drafting of this report.

All names are listed in random order.

金融支持供应链绿色化

“一带一路”绿色投资原则
2021年11月

背景

2018年11月30日，中国金融学会绿色金融专业委员会与伦敦金融城共同发布了《“一带一路”绿色投资原则》（GIP），其中原则六指出“应将ESG因素纳入供应链管理中，并在供应链管理相关投资、采购和运营活动中应用优秀国际实践经验”。

GIP已迅速发展成为由40家签署机构和12家支持机构组成的国际性网络，其中大多数是大型金融机构，截至2020年8月末，这些成员持有或管理的总资产已超过49万亿美元。随着“一带一路”沿线的成员数量及其业务不断增长，尤其是面对全球疫情带来的空前挑战，对于参与“一带一路”投资的利益相关方来说，深入了解其供应链并纳入更多的可持续性因素变得越来越重要。当金融机构的主要客户在不同情境中受到供应链的影响时，很多情况下风险也会传递给金融机构。为了进一步调查供应链风险如何对金融机构产生影响以及如何管理这些风险，尤其是来自气候和环境的供应链风险，GIP秘书处组织了一些GIP成员来回顾绿色金融的发展和其在供应链管理中的应用，以及不同利益相关方的成功案例，尤其是金融机构。

本报告由GIP秘书处支持，由亚太经合组织绿色供应链合作网络（天津）示范中心牵头研究起草，会同多位GIP内外部专家，共同梳理“一带一路”沿线国家发展绿色金融支持供应链绿色化的概况、问题和趋势，征集多项示范案例，提出政策建议。

1. 好处和机遇

1.1 概述

环境问题、粮食和其他资源的短缺以及相关的安全和公共卫生问题已经给跨国企业带来了压力，引导其通过纳入更多可持续性因素来改变采购方式，例如建立绿色/可持续供应链。

绿色供应链要求在产品的整个生命周期（包括产品的设计、采购、制造、包装、分销、消费和回收）中将对环境的影响降至最低，同时将能源、土地、水和森林以及其他资源的利用效率最大化，从而带来环境和经济效益。绿色供应链依赖于并推动供应链中上下游企业的协同努力。不仅核心企业（或买方），还有供应商（卖方），他们的环境、社会和治理（ESG）绩效都可以通过健全的供应链管理来进行管理、评估、改进和调整。

搭建平台以提高“一带一路”沿线基础设施投资相关所有行业供应方市场对更绿色、能效及资源效率和品质更高产品的认识至关重要。许多亚太经合组织经济体已经通过引入绿色公共采购、绿色消费、生态标签和绿色金融来推进其绿色供应链目标和激励政策。2014年10月，APEC第22次领导人非正式会议宣言批准建立APEC绿色供应链合作网络以及其在中国天津的首个示范中心，以通过引入绿色供应链来促进绿色增长合作和互联互通。

1.2 机遇和风险管理

巨大的潜在投资机会和供应链成本节约

据中国美国商会称，通过引入绿色供应链管理，供应链的经济绩效平均可以提高至少10%。据研究，在绿色供应链模式下，再制造产品的成本可以降低40%至65%，能耗可以降低85%¹。2016年，通过89个碳信息披露项目（CDP）

1. 碳信托等，Supporting Excellence in UK Remanufacturing, 2014。

成员的努力完成了 4.34 亿吨的碳减排（这比法国 2014 年的全部碳排放量还大），实现了 124 亿美元的成本节约，这些成员包括微软、宝马、沃尔玛、百事可乐以及其他一些领先企业²。

CDP 和公众环境研究中心联合发布的最新 SCTI 指数显示，企业的温室气体排放中，供应链产生的直接碳排放总量平均是这些核心企业产生的直接碳排放量的 5.5 倍³。然而，在回应 CDP 的核心企业中只有 23% 宣称已经与其供应商开展气候变化方面的合作，只有 4% 的供应商设立了其自身减排目标⁴。这表明全球供应链网络中的很大比例的企业尚未将气候因素纳入其业务战略，并且存在巨大的投资潜力和成本节约机遇。

数百亿美元的融资成本节约

据估计，全球应收账款市场价值约为 20 万亿美元，其中至少有 10% 被认为是“银行可融资性的”（银行愿意基于比供应商自身更高的信用评级提供更低成本的融资），关键是其中 1/3 预计是符合更“绿色”条件的。换句话说，全球有 7000 亿美元的未利用的基于应收账款的绿色融资机遇，并且这个数字还在增长，其中大部分是在中国和其他“一带一路”沿线的市场。据估算，如果可以通过遵守贷方 / 核心买方的绿色标准来减少供应商每 90 天 100 个基点的融资成本，那么仅是应收款融资市场上的利息减少，每年就可以节约数百亿美元的成本。

绿色供应链可应对供应链 ESG 风险传递问题。供应商层面的上游 ESG 风险可一直传导至包括核心买家、项目发起方和国有企业到融资方和消费者的整个下游。ESG 风险的这种传导会通过运营延误、用户不满意甚至抵制以及诉讼、信用评级降低和系统性违约的形式造成严重的经济损失，并最终将传导到银行系统。

2. 公众环境研究中心，绿色供应链 2019—CITI 指数 2019 年度评价报告，2019。

3. 公众环境研究中心 & CDP，2019 供应链气候行动 SCTI 指数，2019。

4. 碳信托，Big Buyers Harness the Power of Purchasing to Deliver Emissions Reductions in the Supply Chain, 2017。

2. “一带一路”沿线对绿色供应链金融的巨大潜在需求

据估计，2016—2040年全球基础设施投资需求将达到94万亿美元⁵，其中大部分来自“一带一路”沿线国家和地区。提高能源投资一直是“一带一路”沿线国家和地区的首要任务之一，包括风能、太阳能和核能项目在内的新能源投资在全部新的电力项目中占比可达到90%。随着新技术的发展，可再生能源的成本变得越来越具有竞争力。传统化石燃料产生的ESG风险急剧增加，反过来将导致重大金融风险。

绿色供应链金融已经引入了一种系统性的方法来测量和减少碳密集型生产过程，这对于许多一向被迫在环境与土地经济发展之间做出权衡的“一带一路”沿线国家和地区至关重要。第一，绿色供应链金融促进了新能源项目中设计、材料制造和产品回收的绿色化；第二，绿色供应链金融为粮食安全和农村可持续发展做出了贡献，而农业是“一带一路”沿线大部分国家和地区的基础产业。

5. 全球基础设施中心，Global Infrastructure Outlook--Infrastructure investment Needs: 50 Countries, 7 Sectors to 2040, 2017。

3. 案例研究

3.1 汇丰银行案例

在 2019 年，汇丰银行在绿色贷款和存款的三个领域都很活跃：推出可持续发展供应链融资计划，扩展绿色及可持续发展贷款服务提案，并为企业和机构客户引入绿色存款产品。可持续发展供应链融资计划提供分层定价的融资，让客户能够认可供应商的可持续发展成果。该计划不仅是简单地收益契约的“一次性”使用，而是在整个银行融资服务范围内对客户施加了持续不断的压力，要求客户在日常经营活动中都要遵守绿色标准。最重要的是，只要供应商遵守汇丰银行的绿色定价条件并定期向其汇报，汇丰银行即向供应商提前付款，客户（例如沃尔玛）基于供应关系制定可持续评价规则并定期评估，从而实现整个供应链的参与者都能获得可持续融资计划带来的收益。

这种分层结构类似于与可持续发展挂钩的贷款（有时称为环境、社会及管治利差挂钩贷款），旨在鼓励改变行为和持续改进，并在核心企业的供应商基础中实现乘数效应。目前没有关于“募集资金用途”（即向供应商支付的资金）的规定，也不会确认或追踪这种流动营运资金的最终用途。降低借款成本的判断和触发条件与客户设立的供应商可持续发展绩效指标挂钩。

沃尔玛

交易亮点

通过全球可持续发展供应链融资计划支持沃尔玛的可持续发展举措。

客户

沃尔玛是一家国际零售商，经营连锁折扣店和仓储店，每周为超过 1 亿客户服务。

客户需求

- 作为沃尔玛“十亿吨项目”和可持续发展指数评分计划的一部分，由银行为沃尔玛供应商提供分层定价，促使他们实现若干可持续发展目标。

- ✓ “十亿吨项目”——沃尔玛的一项倡议，目的是在 2030 年底前在全球供应链中减少十亿公吨（十亿吨）温室气体排放。
- ✓ 可持续发展指数评分计划——用于帮助沃尔玛衡量供应商表现并鼓励他们持续发展以实现可持续发展目标的评分，由可持续发展联盟（TSC）提供。
- 由银行制订和管理一项供应商融资计划，使之与客户可持续发展计划中的供应商排名挂钩并相符。
- 支持供应商沟通并提供有关可持续发展供应链融资特点及优点的信息。

汇丰方案

- 在香港设立全球可持续发展供应链融资计划，根据沃尔玛和可持续发展联盟的可持续发展评分框架，允许任意一项举措中符合相关可持续发展标准的供应商申请使用已考虑前述标准达成情况的融资利率。
- 采用可持续发展供应链融资分层定价模型，与供应商的可持续发展评分挂钩，并以沃尔玛与汇丰的信用关系为基础（为供应链融资计划的典型做法）。
- 可持续发展供应链融资计划可向沃尔玛在美国、加拿大和墨西哥的所有为可持续发展做出切实努力的供应商（孟加拉国供应商除外）开放。

3.2 渣打银行案例

3.2.1 概述

渣打银行（SCB）在 37 个接受官方发展援助的国家中活跃，其中包括 11 个最不发达国家。

SCB 设定了一个为期四年的供应链融资目标，即从 2020 年开始为渣打客户的 10000 个国际和国内供应链提供融资。

3.2.2 为国际运动鞋品牌制造商提供绿色供应链融资

客户挑战和需求

客户是一家设计制造运动鞋、休闲鞋、服装和配饰的跨国公司。近年来，随着东南亚和非洲低成本经济中的生产机会的出现以及全球需求格局的演变，其供应链变得越来越复杂，尤其是服装制造业，供应链高度多元化，产品或原材料的采购来源涉及多个地区。在这种既复杂又充满机遇的环境中，公司需要

快速响应不断变化的市场需求，还需要应对公众对品牌商环境及其供应链的社会责任要求。

大型采购商经常努力维持可靠和稳定的采购渠道，以建立稳健而有弹性的供应链，从而不影响生产进度。供应商因为有限的营运资金和较高的借贷成本，需要提早付款。对于较小的供应商而言，获得成本可负担的信贷一直是一个挑战，因为银行需要更多的抵押品来支持其增加的营运资金需求。绿色要求给供应商增加了更多的负担和挑战。

渣打方案

渣打银行向其客户的供应商提供供应商预付款服务（VPP），允许选定的供应商将发票产生的应收贸易账款出售给作为银行主要客户的买方。供应商便可以在开具发票后，以极具吸引力的利率立即获得不超过采购订单金额 70% 的提前付款，而且这项融资不会占用当地银行的信贷额度。在 VPP 计划中，向客户供应商提供的信贷价格基于其可持续性评分。

反过来，通过 SCB 的应收款服务计划，供应商可以向 SCB 提交发票以及折扣请求。SCB 给予发票金额 100% 的折扣以清算未清的装运前贷款，并将剩余金额支付给供应商。适用的费用将按协议扣除。

3.2.3 深层供应链的可持续性融资

传统的供应链融资仅支持第一层供应商，而第二层供应商将需要单独的 SCF 计划，而第一层供应商将作为买方。当今的供应链，特别是对于跨国公司而言，远远不只是一种买卖双方的关系。

2019 年，渣打银行对中国领先的区块链支持的供应链融资平台 Linklogis 进行了战略投资。通过利用 Linklogis 的技术和专业知​​识，渣打银行为大型企业买家提供了广泛的供应商网络可视性和透明度，优化了整个供应链（包括上游供应商）的采购条件，降低了融资成本，从而改善了整个供应链上供应商的贸易/付款条件，并提供与组织内部采购和财务职能的灵活集成。

3.3 哈比银行案例

3.3.1 农业可持续供应链模式

农业是巴基斯坦国民经济基础。农业发展对于巴基斯坦粮食安全和经济繁

至关重要。农业和供应链中小企业融资支持不足，生产效率低下，销售能力不足。

作为巴基斯坦最大商业银行，哈比银行开发出可持续农业供应链模式，从供应链角度对生产端和销售端同时考量如何提升效率，加强对农业和中小企业融资支持，相关成本计入贷款成本。

- 生产端

农业咨询——哈比银行内部农业专家团队支持

农业用品——哈比银行外部供应商直接提供

农业机械——哈比银行外部供应商租赁

- 销售端

哈比银行帮助农户与买家直接联系和交易，优化价格，避免中间商费用，改善农户净现金流。

哈比银行优势

- ✓ 权威的内部农业专家团队
- ✓ 具有竞争力的外部供应商和集中采购带来的价格优势
- ✓ 高效的产销机制：买家大多是哈比银行现有客户，资信有保证，回款便于监管

3.3.2 成功案例

- 奥卡拉的 Depalpur 玉米融资支持项目

交易亮点

- ✓ 共五家农户参与试点
- ✓ 为农户提供高品质免费农具
- ✓ 提供租用农业机械：拖拉机（John Deere 牌）、整地机（LEMKEN 牌）、精准播种机（Monosem 牌）

成果

- ✓ 突破原融资担保框架，为其中一家农户提供信用贷款
- ✓ 农户耕种土地面积普遍扩大（11.5 英亩到 40 英亩）
- ✓ 农户土地较当地平均产量增加超过 10%
- ✓ 农户净收入增加 46%

- ✓ 哈比银行利差达到 6%，贷款回收率 100%
- 旁遮普省古兰杰瓦拉的 Eminabad 水稻试点项目（进行中）

交易亮点

- ✓ 共十一家农户参与试点
- ✓ 总资助面积 377 英亩
- ✓ 为农户提供达到国际标准的优质农业用品
- ✓ 提供租用农业机械：整田机和插秧机（Kubota 牌），几个月后同一品牌的割稻机

3.3.3 独立评估

哈比银行聘请独立第三方机构普林斯顿大学，支持上述融资对农户生产效率 and 收入的影响进行独立评估。

3.3.4 下一步计划

哈比银行将联合开发性银行和业内领先的农业机械、设备、种植、增产、深加工等企业，共同打造“一带一路”沿线绿色农业和可持续发展示范项目。

3.4 中国农业发展银行案例

3.4.1 农业绿色供应链金融支持模式

遴选国家粮食主管部门认定的粮食龙头企业作为重点扶持对象，孵化“产购储加销”一体化全绿色供应链模式，信贷支持绿色供应链核心企业带动农业产业链上下游绿色发展。

- 依托绿色供应链对农业各环节提供绿色融资
 - ✓ 优先优惠的开发性小麦收购贷款。
 - ✓ 土地规模经营贷款。
 - ✓ 优质粮食循环生态基地建设贷款。
 - ✓ 信用保证保险贷。
 - ✓ 支持开展订单农业，免费供种、免费播种、免费收割，加价收购。
 - ✓ “五统一管理”：统一供种、施肥、用药、技术指导、收割，集约化管理，降低成本，提高效率。

3.4.2 成功案例

滨州中裕食品有限公司案例

滨州中裕是国家粮食主管部门认定的优质粮食工程重点示范企业，中国农业发展银行通过一系列绿色金融支持，帮助滨州中裕建立起农业绿色供应链。

- 农业绿色供应链核心企业，集农作物种植、加工、养殖、废弃物利用于一体。
 - ✓ 6.5 万亩标准优质小麦育种基地。
 - ✓ 105 万亩订单农业种植基地，年产小麦 50 万吨以上。
 - ✓ 绿色加工，吃干榨净。面粉和面粉加工，酒精、液态蛋白饲料等小麦深加工，面包和蛋糕等食品加工，以及冷冻食品加工。
 - ✓ 生态养殖基地，变废为宝。年出栏生猪 30 万头。用深加工环节产生的酒糟制作混合饲料，循环利用。所产猪肉品质高，销售毛利润高于同行业 6%。
 - ✓ 可再生能源利用。设计建成 35kwh/ 年的沼气发电站一座，利用加工环节产生的废液和养殖环节产生的粪污形成沼气转化为电能和热能，沼液作为有机肥料回到种植基地施肥，沼气每小时发电 4000 度，年节约电费 2000 万元。
- 交易亮点
 - ✓ 农村土地流转和规模经营贷款，累计投放 0.8 亿元。
 - ✓ 小麦收购贷款。以免费播种、免费收割、免费技术指导和比市场加价 15% 的方式收购粮食，使当地农民每亩增收 340 元左右，共带动周边农户年增收达 5.1 亿元。
 - ✓ 优质小麦循环生态基地建设贷款。
 - ✓ 信用保证保险贷款。

3.5 天津滨海农商银行绿色供应链金融创新案例

天津滨海农村商业银行股份有限公司（“滨海农商行”）立足服务中小企业的客户定位，积极发展绿色金融，不断推进信贷资源配置的优化调整，积极利用信贷杠杆对环保低碳友好型企业提供绿色信贷支持，探索基于供应链的绿色金融创新，支持供应链协同减排。

天津新立中合金集团再生铝回收融资项目

交易亮点

开发金融创新产品支持传统行业供应链协同实现碳中和。引入第三方机构绿色供应链评价，提供绿色信贷便利，支持再生铝资源回收利用，推动传统有色金属加工行业打造绿色供应链。

客户

天津新立中合金集团（“立中合金”）是我国领先的铸造铝合金锭和铝合金液制造企业和再生铝生产龙头企业。2019年，立中合金获选工信部绿色供应链管理示范企业和绿色制造系统解决方案供应商（高值废旧产品资源化利用系统集成应用解决方案）。

再生铝利用是推进有色金属工业碳达峰碳中和重要着力点，利用每吨再生铝约节能 3443 千克标煤、节电 13000 度和节水 22 立方。立中合金成立业内首家含铝废料循环利用工程研究中心，会同国内外知名大学承接国家国际合作专项“废杂铝高品质绿色再生及杂质元素有益化研究”课题，取得多项重要成果，建成再生铝合金生产基地，形成突出的前沿技术产业化优势。

立中合金成立物易宝（天津）能源科技有限公司（“项目公司”），按照“互联网+回收”模式打造物易宝再生资源交易服务平台（“物易宝”），规范废杂铝回收模式，利用中国（天津）自贸区相关政策统一解决再生资源回收开票问题，拓展回收渠道和规模，在全国范围内收购废杂铝等散乱再生资源，在上游供应商和下游客户之间建立绿色回收体系，将回收的废杂铝和生产废料组织加工成为再生铝生产原材料予以循环再利用，形成“资源-产品-废弃物-再生资源”的闭环绿色供应链。

客户需求

根据 2019 年国家发展改革委发布的有关绿色产业目录和产业调整指导目录的规定，废旧金属等资源再生利用产业属于绿色、鼓励类产业。传统的有色金属加工行业受限于污染物排放和能耗水平等因素，不属于国家产业及银行授信优先支持的行业。

立中合金主营业务既属于传统有色金属加工业，又涵盖再生铝回收利用，

需要引入优惠的融资便利支持不断提升再生铝原材料比重，促进节能减排，优化供应链环境、资源和生产经营综合绩效。

物易宝负责废杂铝再生资源回收，急需获得融资支持扩大废杂铝收购规模，保障再生铝原材料供给。

滨海农商行融资支持

- 支持立中合金构建铝合金行业双向绿色供应链，大力支持再生铝回收利用，明确将立中合金作为绿色、鼓励类产业予以支持。

- 精准把握再生铝绿色供应链内在逻辑，打造定制化融资方案，为立中合金通过项目公司打造的物易宝再生资源回收平台提供 1000 万元信用贷款，作为流动资金贷款用于支持废杂铝和相关再生资源回收。

- 综合考虑企业平均账期 45 日，废杂铝均价为每吨 2 万元，可支持企业年化减少碳排放约 5600 吨。探索合作机制，引入前沿数字技术，记录融资对应形成的供应链碳减排量和其他主要污染物减排和资源节约成果，进一步探索供应链碳金融创新。

- 总结本项目经验模式，形成绿色供应链金融创新服务方案，逐步推广扩大规模。

3.6 广州汽车绿色供应链金融创新政策示范

广州是首批国家级绿色金融改革创新试验区，是中国重要的汽车产业基地，聚集超过 1200 家汽车整车和零部件企业。广州率先推动在大湾区开展汽车行业绿色供应链政策示范。

● 绿色供应链金融模式

以国家绿色产业指导目录为基础，制定整车制造企业的绿色供应链评价体系，使得金融机构可以围绕指南发布的白名单对整车制造企业的上下游提供绿色金融服务。地方绿色金融专项补贴向供应商提供资金补贴，央行绿色金融专项货币政策向金融机构降低融资利率。

● 出台政策

2020 年 7 月，中国人民银行广州分行和中国绿色金融专委会共同出台《大

湾区绿色供应链金融服务指南》(“《指南》”)

- 成功案例

广汽本田案例

- ✓ 广汽本田作为供应链核心企业，参考《指南》对供应商进行绿色属性评价，并设立白名单，金融机构可根据白名单对广汽上下游企业提供绿色供应链金融服务
- ✓ 参与金融机构：中国银行、中国建设银行、兴业银行、广州银行
- ✓ 融资特色：绿色金融支持与供应链金融支持叠加，使企业融资成本显著降低。
- ✓ 基础金融产品：企业应收账款、仓单、应付账款等提供的信贷、票据类融资产品。

3.7 “一带一路” 可持续基础设施项目融资案例

为回应全球对可持续基础设施的关切，帮助对外承包工程企业应对 ESG 风险，争取绿色金融支持，中国对外承包工程商会发布《中国企业境外可持续基础设施项目指引》，并先后于 2017、2019 年组织两次评选，共评出 37 个示范项目。

3.7.1 多哥埃雅德玛国际机场扩建及现代化改造项目

项目由中国民航机场建设集团公司和威海国际经济技术合作股份有限公司共同承建，由中国进出口银行提供 1.5 亿美元的优惠贷款和优惠买方信贷。

- ✓ 绿色采购。以 ESG 作为供应商遴选的考察评价以及是否继续合作的 KPI 之一，包括但不限于优先选择通过 ISO 14000 认证的分包商及材料设备供应商。扶持当地中小企业供应商发展，实现水泥当地采购，降低物流碳排放。通过绿色采购机制带动当地供应商提升绿色环保绩效，降低环境风险，主动提供相关技术和管理指导。
- ✓ 供应商绿色管理。要求所有供应商签署并提交环境声明表和社会责任承诺书，提升供应链的社会责任意识 and 能力，坚持绿色运营和资源的可持续利用，建造绿色工程。对分包商进行环境安全教育。
- ✓ 废弃物管控。制订发放《相关方环境、安全宣告表》，规范供应商在废水、

废气、废渣管理方面的行为。

3.7.2 乌干达 KE 机场高速公路项目

项目由中交一工局集团承建，总造价 4.76 亿美元，其中 3.5 亿美元的贷款期限为 5 年，由中国进出口银行提供，年利率 2%，可在 25 年内偿还。

- ✓ 绿色采购。优先采购绿色环保材料，要求提供质量合格和绿色环保证书，并根据情况进行检测。与环境绩效好的优秀供应商建立长期合作关系。
- ✓ 供应商绿色管理。提出社会责任目标，要求供应商主动履行社会责任，保护生态环境。帮助供应商提升工艺水平和环境绩效。
- ✓ 建立治理机制，制订规范流程。

3.7.3 乌兹别克斯坦安格连 – 琶布铁路隧道项目

项目总投资为 4.55 亿美元，其中当地提供 1.05 亿美元，3.5 亿美元为中国进出口银行提供的优惠贷款。项目全场 169 公里，其中隧道工程为最重要的控制性工程。

- ✓ 绿色采购。严把供应商选购关口，与环境保护有关的物资和服务均要求符合当地环境标准。
- ✓ 绿色施工和回收。采用“以隧养隧”原则，自建砂石料生产场地。隧道所需的 98% 砂石料取材于隧道挖掘所产生洞渣。五座混凝土搅合站的散装水泥罐均来自于之前项目旧罐体再利用。

3.7.4 巴基斯坦卡洛特水电站项目

巴基斯坦第五大水电站，总投资 17.4 亿美元，由三峡国际能源投资集团以 BOOT 模式投资建设。融资 14 亿美元，由中国进出口银行、国家开发银行、国际金融公司、丝路基金以银团贷款提供，三年半完成国际银团融资关闭。是 IFC 迄今为止在“一带一路”沿线国家投资的最大一单项目。

- ✓ 充分发挥 IFC 国际经验应对管理 ESG 风险。
- ✓ 重视与各利益相关方就 ESG 问题的沟通协调，促进当地环境法规标准与中国标准对接。
- ✓ 探索绿色采购。主要设备由中国厂家生产制造，整个项目将带动 29 家国有企业共计 3.38 亿美元的“中国制造”走出去。

4. 挑战

4.1 绿色供应链仍处于发展初期。绿色供应链实践、绿色评价基础体系、绿色定价原则等处于发展的初级阶段，使得金融机构产品创新存在技术和商业方面的障碍。

4.2 法规设计和政策激励缺位。绿色供应链作为市场驱动的创新机制，最初主要是通过发挥核心企业集中采购力带动上游供应商协同实现绿色化。如何通过行政手段支持绿色供应链发展，尚在探索中。金融支持绿色供应链缺乏清晰稳定的政策框架及相应的监管压力和政策激励。

4.3 金融机构和企业，公共和私营部门之间沟通不足。尚未建立起对话和协作机制模式，帮助将绿色供应链因素纳入金融活动和产品创新决策过程中。

4.4 为发展绿色供应链进行的上下游垂直化组织推动缺乏动力。目前，制造和终端消费及二者之间的物流环节，通常都在多个司法管辖区进行，要沿着供应链上下游协调利益、收集和监测信息，特别是还要加上绿色要求，在不同法律管辖区建立信任，扩大融资等等，都需要付诸大量工作，供应链一个或者多个参与方必须有足够的动机和激励措施，才会投身其中。目前，这样的动机和激励措施还远远没有到位。

4.5 缺乏一体化的绿色供应链标准、管理工具和关键绩效指标。尽管私营部门已经发布了一些和绿色供应链有关的标准和指南，但是公认的具有权威性的绿色供应链标准还未制定出来。大型买家/项目发起方、政府都建立了不同的绿色标准，由于不同行业中供应、生产和交付所涉及的过程和产品的差异，很难去比较这些绿色标准的差异。在缺乏通用标准、评估工具和第三方“绿色评级”机构的情况下，金融机构自行确定和应用“绿色”标准提供相应的优惠融资支持，既多费时间成本又不经济。

4.6 ESG 信息难以获取，缺乏透明度和跟踪系统。与其他企业相比，核心企业在实施绿色供应链管理过程中承担更多的 ESG 信息披露责任。不仅需要收集自身的信息，而且还需要收集不同级别的供应商信息。气候相关数据不足，缺乏相关的跟踪记录指标和方法，使得金融机构难以评估某个企业或资产对气候的影响。因此，为气候变化风险和机遇纳入融资和投资组合管理，带来了挑战。

4.7 法律冲突。在供应链融资项目中，法律、会计、税收、债权人权利和合同等方面存在很大差异，尤其是在“一带一路”沿线司法管辖区之间。如果不进行分析，由于不同辖区的处理和对待方式不同，可能会导致意外和损失。

5. 建议

5.1 加快政策设计。提高对绿色供应链融资重要性和潜力的认识，促进绿色供应链政策制定，鼓励相关金融创新。监管和激励双管齐下，通过政府采购、补贴、减免、税收优惠和监管资本减免等行政行为，促进绿色供应链融资市场发展。金融监管部门将绿色供应链相关的融资纳入绿色金融统计考核口径进行相应的考核和激励，包括各类针对绿色采购、绿色产品和绿色供应链企业的绿色金融支持，出台相应的利率优惠政策鼓励金融机构提供相应的优惠融资便利。

5.2 促进跨部门绿色供应链合作，促进主要参与方的绿色采购和消费。开展“一带一路”沿线可持续基础设施项目的绿色供应链融资创新，扩大对实施绿色采购和其他绿色供应链管理企业的资金支持。应当着重鼓励两种类型的参与方实施绿色采购和消费：一类是供应关系复杂、链条长且影响力大的核心企业，尤其是处在城市化程度相对高的领域；另一类是国有企业、项目发起方、政府和多边机构。

5.3 推动标准化合作和第三方服务市场发展。支持发展适用的行业绿色供应链标准和关键绩效指标（KPI）。促进绿色供应链标准体系与现有绿色产品和其他绿色标准的融合与协同；积极推动绿色评价和其他第三方服务，为绿色供应链融资提供基础支撑。

5.4 将绿色供应链纳入金融机构产品体系和决策流程。在金融机构产品体系和决策流程引入绿色供应链理念和考量。大型金融机构应当推出各类绿色供应链友好型的融资工具，对基于应收帐款的供应链金融模式进行创新，根据绿色表现推出差异化的优惠融资，鼓励供应商提升绿色绩效，推动绿色供应链金融惠及更深层的上游供应商。

5.5 引入数字化技术，促进供应链 ESG 信息披露和归集。加强区块链、工

业互联网、物联网和大数据等技术应用和平台建设，发展绿色科技金融，汇集可信赖的全链条 ESG 信息，提升融资效率，降低融资成本。

5.6 加强国际合作与能力建设。充分发挥 GIP 等有影响力的国际合作倡议的作用，促进跨境、跨行业的公共与私营部门开展绿色供应链对话与合作，推动绿色供应链相关法规政策和标准化协同与互认。加大支持力度，促进跨学科绿色供应链金融基础理论和实证研究开展培训与研讨，推动各类能力建设，开展机制平台建设促进产融对接和项目示范。

5.7 支持农业绿色供应链发展，建设“一带一路”可持续农业产业园，促进绿色产品跨境贸易，带动农村可持续发展。

致谢

本报告是在 GIP 秘书处支持下，由亚太经合组织绿色供应链合作网络（天津）示范中心承接，会同 GIP 多位内外部专家共同研究起草完成。

我们感谢以下专家对报告内容以及案例的卓越贡献：赵立建先生，黎菁女士，黄意文女士，石朝晖先生、谭露露女士，程伟女士，陈玉林先生、王华艺女士，杨菲女士，杨福彬先生、左志成先生。

我们感谢以下专家在报告研究过程中给予的宝贵意见：殷红女士，陈亚芹女士，范彬彬女士，郑桥先生，郭晓菲女士，曹雅楠女士，Lucas Fu 先生，郝鸣春女士，李晓真女士，宋莎女士，周然女士，许丹女士，张志毅先生，李天先生、张顺先生，陈军先生，马心悦女士及其他专家。

我们特别鸣谢 Fred Chang 先生给予的专业指导和无私帮助。

亚太经合组织绿色供应链合作网络（天津）示范中心穆玲玲女士、马英芳女士和陈建威先生等参与本报告研究写作。

以上排名不分先后。

Financing for a Greener Supply Chain
金融支持供应链绿色化

Green Investment Principles for
the Belt and Road
November 2021

“一带一路”绿色投资原则
2021年11月