

ASSESSMENT

30 October 2023



Contacts

Daniel Tong
 Sustainable Finance Analyst
 daniel.tong@moodys.com

MJ Park
 Senior Sustainable Finance Associate
 mj.park@moodys.com

Alice Presotto
 Sustainable Finance Associate
 alice.presotto@moodys.com

Young Kim
 Sustainable Finance Analyst
 young.kim@moodys.com

Melody Au
 Sustainable Finance Associate
 melody.au@moodys.com

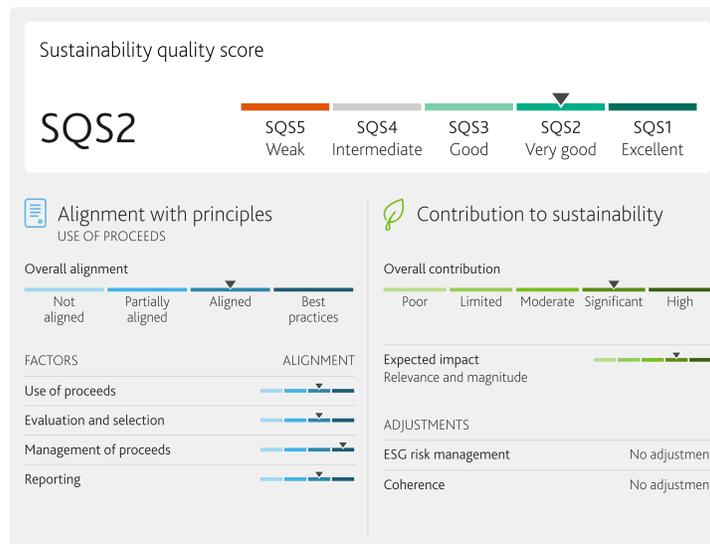
Jeffrey Lee
 VP-Sustainable Finance
 sukjoonjeffrey.lee@moodys.com

China Merchants Group Limited

Second Party Opinion – Sustainable Financing Framework Assigned SQS2 Sustainability Quality Score

Summary

We have assigned an SQS2 sustainability quality score (very good) to China Merchants Group Limited's (CMG) sustainable financing framework dated October 2023. CMG has established its use-of-proceeds framework with the aim of financing projects across nine eligible green categories and five eligible social categories. The framework is aligned with the four core components of the International Capital Market Association's (ICMA) Green Bond Principles 2021 (including June 2022 Appendix 1) and Social Bond Principles 2023 and Sustainability Bond Guidelines 2021, and the Loan Market Association, the Asia-Pacific Loan Market Association and the Loan Syndications & Trading Association's (LMA/APLMA/LSTA) Green Loan Principles 2023 and Social Loan Principles 2023. The framework demonstrates a significant contribution to sustainability.



This report was republished on 3 November 2023 to clarify the description on pages 10 and 15 of the target groups with limited access to essential services in education and vocational training.

Scope

We have provided a Second Party Opinion (SPO) on the sustainability credentials of CMG's sustainable financing framework, including the framework's alignment with the ICMA's Green Bond Principles 2021 (including June 2022 Appendix 1), Social Bond Principles 2023, and Sustainability Bond Guidelines 2021, and the LMA/APLMA/LSTA's Green Loan Principles 2023 and Social Loan Principles 2023.

Under its framework, CMG plans to issue use-of-proceeds sustainable financing transactions (SFTs) to finance projects in nine green categories and five social categories, as outlined in Appendix 2 of this report.

Our assessment is based on the latest updated version of CMG's framework dated 27 October 2023, and our opinion reflects our point-in-time assessment of the details contained in this version of the framework, as well as other public and nonpublic information provided by the company.

We produced this SPO based on our [Framework to Provide Second Party Opinions on Sustainable Debt](#), published in October 2022.

Issuer profile

China Merchants Group Limited (CMG) is a leading Chinese state-owned enterprise (SOE) founded and headquartered in Hong Kong SAR, China and wholly owned by China's central government. CMG was established in 1872 as China's first joint-stock company. CMG's main business lines focus on transportation and logistics, comprehensive finance, property development and management, and emerging sectors.

CMG is committed to implementing the national "dual carbon" goals of carbon peaking by 2030 and carbon neutrality by 2060 into the group's overall business planning, with a focus on reducing carbon emissions through green technology and emerging industries. CMG is committed to achieving the sustainability goals through various initiatives including low-carbon shipping, ports, logistics and highways, green building and renewable energy, and so on.

Strengths

- » Clearly defined environmental and social objectives, in line with the United Nations' (UN) Sustainable Development Goals (SDGs)
- » Clearly defined and transparent project evaluation and selection process
- » Clear communication of the calculation methodology and assumptions used to report on the environmental impact
- » Reporting until the maturity of the bond or repayment of the loan

Challenges

- » Due to the diversified business nature of CMG, some of the green and social categories are broadly defined
- » Commitment to obtain an independent external verification of the allocation and impact of the use of proceeds until full allocation and in case of significant changes, on a best-effort basis

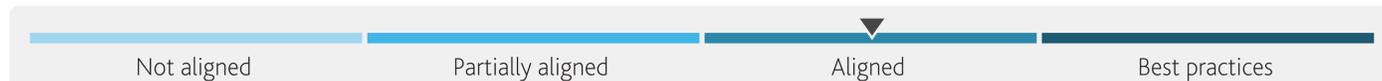
This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody's.com> for the most updated credit rating action information and rating history.

Alignment with principles

CMG's sustainable financing framework is aligned with the four core components of the ICMA's Green Bond Principles 2021 (including June 2022 Appendix 1), Social Bond Principles 2023 and Sustainability Bond Guidelines 2021, and the LMA/APLMA/LSTA's Green Loan Principles 2023 and Social Loan Principles 2023.

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Use of proceeds



Clarity of the eligible categories – ALIGNED

The company has clearly communicated the nature of the expenditures (both capital and operating expenditure). The eligibility criteria for nearly all project categories are clearly defined, although the criteria for some categories and subcategories are defined broadly due to the diversified business nature of the company. The company identified the location of eligible projects to be mainly in mainland China for its upcoming issuance. The exclusion criteria are also clearly defined and outlined in the framework.

Clarity of the environmental and social objectives – BEST PRACTICES

The company has clearly outlined the environmental and social objectives associated with all nine green and five social categories. All eligible categories are relevant to the respective environmental and social objectives to which they aim to contribute. The company has referenced the UN SDGs in articulating the objectives of the eligible categories, and the objectives are coherent with these recognized international standards.

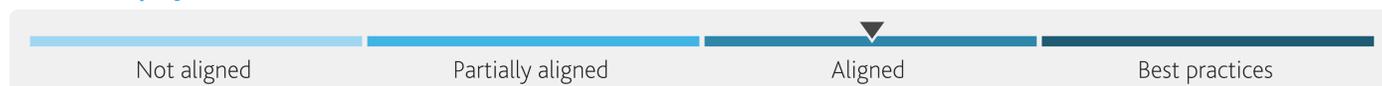
Clarity of the expected benefits – BEST PRACTICES

The company has identified clear expected environmental and social benefits for most of the eligible categories with reference to SDG targets, and these benefits are relevant to the projects to be financed under each category. The benefits are measurable for all project categories, and the company will report on these quantitative benefits in its annual reporting. The company has confirmed through internal documents that it will commit to transparently communicating the estimated share of refinancing to bondholders and lenders, and it has committed to a maximum three-year lookback period for refinanced projects.

Best practices identified

- » Objectives set are defined, relevant and coherent for all project categories
- » Relevant benefits are identified for all project categories
- » Benefits are measurable and quantified for most projects, either ex-ante with clear baselines or with a commitment to do so in future reporting
- » Commitment to transparently disclose the share of proceeds used for refinancing where feasible
- » Commitment to transparently communicate the associated lookback period(s) where feasible

Process for project evaluation and selection



Transparency and quality of the process for defining eligible projects – ALIGNED

The company has established a clear process for determining the eligibility of projects, with granular decision-making criteria formalized in its framework. The company or its subsidiaries will set up Sustainability Management Committees (SMC) to oversee the project eligibility. The SMC will comprise individuals with relevant expertise from various departments including finance and treasury, product management, operations management, branding and marketing, human resources and strategic development/ investment management departments. These individuals have clearly defined roles and responsibilities, and will collectively oversee the proposal, selection and validation of eligible projects. The SMC will also be responsible for the continued monitoring of compliance of the selected projects with eligibility and exclusion criteria throughout the life of the SFTs. The company confirmed that CMG and its subsidiaries will document the process of evaluation, selection and monitoring in its internal documentation. In case a selected project no longer meets the eligibility criteria, CMG and its subsidiaries will reallocate the proceeds to other eligible projects as soon as reasonably practicable. CMG will also maintain regular communication with its subsidiaries to monitor the project evaluation and selection process.

To avoid the potential risk of double accounting, CMG will maintain regular communication with its subsidiaries and a register to keep track of the use of proceeds to ensure that the proceeds raised by CMG or its subsidiaries under this framework will not be allocated to the same eligible projects.

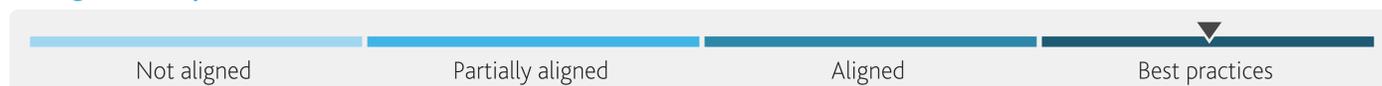
Environmental and social risk mitigation process – ALIGNED

The company has established a comprehensive environmental, social and governance (ESG) management system including a sustainability management team at the group level, and a sustainability committee at the board level and operations management level. As a SOE, CMG abides by China's Energy Conservation Law, Environmental Protection Law, and other relevant laws and regulations on environmental protection to ensure that financed projects will comply with relevant regulations. CMG will ensure that its subsidiaries also comply with laws and regulations on environmental protection, and occupational health and safety.

Best practices identified

- » The roles and responsibilities for project evaluation and selection are defined and include relevant expertise
- » There is evidence of continuity in the selection and evaluation process through the life of the financial instrument(s), including compliance verification and procedures to undertake mitigating actions when needed
- » The process for project evaluation and selection is traceable
- » Presence of corrective measures to address environmental and social risks across projects
- » ESG controversies are monitored

Management of proceeds



Allocation and tracking of proceeds – BEST PRACTICES

The company has defined a clear process for the management and allocation of the SFT proceeds in its publicly available framework. Net proceeds from any SFT issued under the framework will be managed by CMG's and its subsidiaries' finance and treasury teams, and deposited in the general funding accounts and earmarked for allocation to eligible projects, which will be tracked through their dedicated registers. The company confirmed through internal documents that it will annually update the balance of funds to match

allocation to eligible projects. The company is committed to allocating net proceeds of each SFT within 24 months from the date of issuance. The company will also maintain regular communication with its subsidiaries to monitor their management of proceeds.

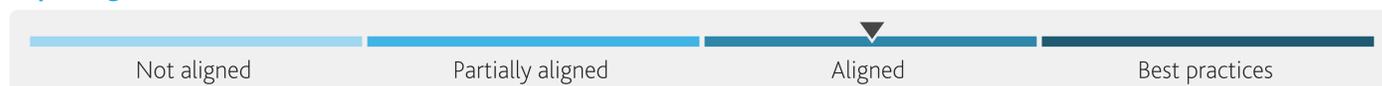
Management of unallocated proceeds – BEST PRACTICES

Unallocated proceeds will be held in accordance with CMG's and subsidiaries' usual liquidity management practices, and will be invested in instruments including cash and cash equivalents. In the event that a project becomes ineligible, the company will replace that project with new eligible projects as soon as reasonably practicable. Any fossil fuel assets/projects are excluded from temporary investments, as specified in the framework's exclusion criteria.

Best practices identified

- » Broad disclosure of a clearly articulated and comprehensive management of proceeds policy to external stakeholders, bondholders or lenders at a minimum
- » Disclosure on temporary placement and presence of exclusion criteria toward environmentally or socially harmful activities
- » Commitment to reallocate proceeds to projects that are compliant with the framework

Reporting



Transparency of reporting – ALIGNED

The company will report annually on the use of proceeds of the SFT(s) issued under its framework throughout the life of the SFT(s). The reporting will be made publicly available on CMG's sustainability/ESG reports or website. The company has stated that reporting will cover the amount of proceeds allocated at each category level, the amount of unallocated proceeds and the examples of eligible projects (subject to confidentiality disclosures). The company has communicated to us that reporting will be made on a timely basis in case of significant developments or issues or controversies related to the project.

The company has identified relevant environmental and social reporting indicators for all the eligible categories, and has clearly disclosed these indicators in its framework. In addition, the company will on a best-effort basis seek independent verification of its proceeds allocation and impact on an annual basis until full allocation or upon any significant development of the SFT. The company also commits to clearly communicate the calculation methodology and assumptions used to report on the environmental impact.

Best practices identified

- » Reporting until full bond maturity or loan payback
- » Reporting covers material developments and issues related to the projects or assets
- » Reporting on allocation of proceeds and benefits done at least at eligible category level
- » Clear and relevant indicators to report on the expected environmental/social impact of all the projects, where feasible, or eligible categories
- » Disclosure of reporting methodology and calculation assumptions to bondholders or lenders at a minimum

Contribution to sustainability

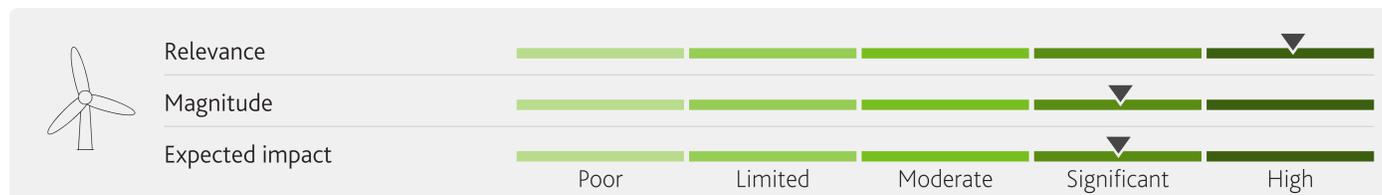
The sustainable financing framework demonstrates a significant overall contribution to sustainability.



Expected impact

The expected impact of the eligible projects on environmental and social objectives is considered significant. Based on information provided by the company, we expect a higher proportion of the proceeds from forthcoming issuances to be allocated toward the renewable energy, clean transportation, green building and energy-efficiency categories. Therefore, we have assigned greater weights to these categories in our assessment of the overall framework's contribution to sustainability. A detailed assessment by eligible category is provided below.

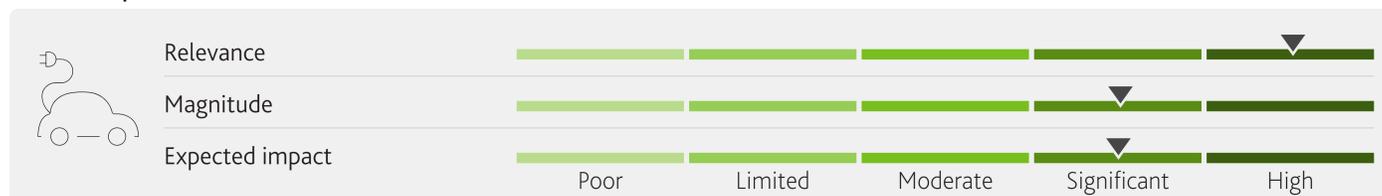
Renewable energy



The relevance of this category is considered high because renewable energy plays an essential role in China's grid decarbonization. Reportedly, around 66% of China's electricity was generated by fossil fuels in 2021¹, with most of it coming from coal. The financed projects under this category is in line with the 14th Five-Year Plan (2021-25) for the National Economic and Social Development of China, helping the country achieve carbon neutrality before 2060 and reduce the share of fossil fuels in electricity generation. In China, the national target is to achieve around 33% of power from renewable sources by 2025, up from 28.8% in 2020. Taking into account the importance of energy in CMG's operations, as well as the need for decarbonizing the energy mix, the relevance is considered high.

This category will have significant positive impact on the environment because solar and wind power are considered the best-in-class technology and are not likely to have lock-in effect. The company has confirmed that in the coming issuances the vast majority of proceeds will be allocated toward these projects and for the other types of renewable energies, the company is committed to strictly following the EU Taxonomy and the Climate Bonds Initiative (CBI) taxonomy to determine the eligibility criteria of the projects. However, there is a lack of visibility as to which international standard will be followed; therefore, the stricter of the criteria may not always apply. In addition, granularity is lacking at the project level, for example, the source of biomass cogeneration is not indicated. Therefore, possible lock-in effects and negative externalities are not avoided for all the technologies.

Clean transportation

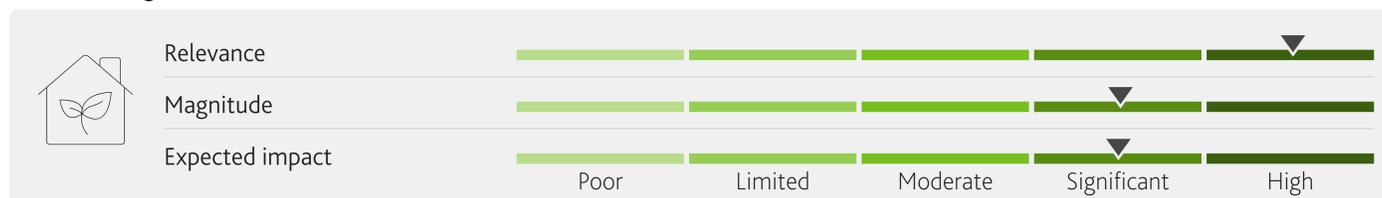


The relevance of this category is considered high because the transportation sector contributes around 10% of China's overall carbon emissions. Chinese cities face significant challenges of severe air pollution and greenhouse gas emissions from the growing number of

motorized urban vehicles. Port infrastructure that supports electricity use is particularly relevant in China considering the Chinese ports face challenges of low efficiency and high pollution. The projects proposed by the issuer are in line with national priorities in terms of clean transportation, as this category encompasses low-emission transportation facilities and electricity charging stations and hydrogen fueling station. The relevance of this category to CMG's business is high given that CMG includes nine subsidiaries whose core business involves transportation and logistics on water and land.

The category will have significant positive environmental impact because the electrified equipment, vehicles and vessels will have zero direct emissions which will have a long term positive impact on the environment with the decarbonization of the national grid. The supporting port and highway infrastructure including the charging station and hydrogen fueling station will support the development of low-carbon water and road transportation. However, the list of supporting infrastructure is not exhaustive and has not specifically limited to zero direct emissions models which could potentially have the lock-in effect.

Green buildings



The relevance of this category is considered high because financing energy- and resource-efficient buildings in China addresses a highly important issue. As reported by the International Energy Agency (IEA), the building sector accounted for 30% of global final energy consumption and 27% of total energy sector emissions in 2021. The building is one of the largest energy consumers and GHG emitters in China, accounting for 5% of the country's total carbon emissions². Decarbonization of the building sector will play a crucial role in reducing energy consumption, and greening buildings are a relevant topic for China because the demand for housing is likely to remain robust, especially in urban areas. This category aligns with national strategies to promote green buildings. Furthermore, this category is also highly relevant to the issuer because property development and management is one of the four core areas where the issuer is focusing. Greening of buildings is therefore one of the most relevant environmental issues for the company and expansion of this segment will help reduce financed emissions and enable the issuer to achieve climate neutrality by 2050.

Investments in this category are considered to have a significant magnitude because we expect the projects to reduce carbon emissions by improving the energy efficiency of buildings substantially. China's Green Building Evaluation Label - 3 star, which we believe will be the most frequently adopted label based on the company's location, has stringent criteria. The 3-star label is considered a proxy by the CBI for the top 15% buildings in terms of energy performance. This label also requires that buildings have at least a 20% improvement in their thermal performance compared with the existing national standards. Alternatively, the issuer will accept internationally recognized certifications such as LEED Gold, Beam Plus Gold and BREEAM Excellent or above. However, the level of the certifications proposed is not the highest and the issuer has not set any additional requirements on energy efficiency. The lack of granular thresholds could lead to varying levels of energy performance. In addition, while the construction of new buildings has inherently higher negative environmental impact than retrofitting, information on the expected allocation between new and existing buildings is absent, further limiting visibility into the expected impact.

Terrestrial and aquatic biodiversity conservation



The relevance of this category is moderate, because biodiversity loss is not the most relevant or core sustainability challenge faced by CMG's business segments compared with other green categories. Nonetheless, biodiversity loss is a significant problem in China, mainly caused by rapid urbanization, industrialization, and land-use changes resulting in the reduction and degradation of natural landscapes and habitats.

The category has moderate magnitude because it lacks details regarding the technologies and thresholds, which limits visibility into the extent to which projects can contribute to the stated environmental objective. While protecting terrestrial and aquatic biodiversity can have a long-term positive impact on terrestrial and marine ecosystems, the impact will largely depend on the type of measures implemented.

Sustainable water and wastewater management



The relevance of this category is high because it addresses the most challenging environmental issues of China and CMG. The country currently faces critical problems related to water scarcity, uneven distribution of water resources both spatially and temporally, and poor water quality³. Such challenges are likely to be exacerbated because of the country's rapid economic growth, urbanization and increasing impact from climate change. In response, the government has pledged to enhance sewage treatment capabilities and broaden recycling initiatives by 2025. Despite increased investments in clean drinking water and wastewater treatment plants in recent decades, challenges persist regarding water quality and sustainable design and operation of existing facilities, indicating the need for further investment in water and wastewater treatment projects. CMG also identified water resource management as one of material sustainability challenges in its materiality matrix.

The category is considered to have a moderate impact on the environment because while the projects are likely to have a long-term positive impact on the stated environmental objective, most of the subcategories lack details regarding the technologies and technical thresholds, which limits visibility into the full extent to which projects will contribute to the stated environmental objective and the potential E&S risks. CMG has communicated to us that wastewater treatment-related projects will comply with the requirements in the Common Ground Taxonomy (CGT), however, there is lack of visibility as to how the CGT will be followed.

Energy efficiency



The relevance of this category is high because promoting energy savings and improving energy efficiency are highly relevant to CMG's business sectors ranging across property development, buildings, industrial, transportation and shipping activities, which are all substantial contributors of emissions in China. The category is also highly relevant at the country level because China's national decarbonization strategy includes various initiatives related to energy efficiency, demonstrating that it is an integral part of the country's dual carbon goals.

The magnitude of this category is significant because the eligible energy-efficiency projects will have positive long-term impact and are not expected to have significant negative lock-in effects. In addition, CMG has set an energy consumption improvement threshold of 30% which is in line with internationally recognized standards such as the EU taxonomy and CBI criteria. However, the category lacks details regarding the type of sectors, businesses and activities that the energy-efficiency measures will be used toward, which limits visibility into the extent to which projects will contribute to the stated environmental objective.

Climate change adaptation



This category has significant relevance overall because climate change is a critical issue globally, and countries in the Asia-Pacific region, particularly China, are especially vulnerable to physical climate change risks and related natural disasters such as floods and droughts. Addressing climate change is also a crucial part of China's national net zero strategy. However, because CMG has set addressing climate change as a low priority in its materiality matrix, this leads to an overall significant relevance of this category.

The magnitude of this category is moderate because of the lack of details on the technologies and thresholds, which limits visibility into the extent of the category's contribution to climate change adaptation. Additionally, while the eligible projects could have a positive impact in terms of limiting the negative effects of climate change, the types of eligible activities provided by CMG through internal documents (for example, installation of windproof devices and alarms, increasing inspection and maintenance of equipment, and so on) are small in scale, so their impact is not likely to be as significant as other climate change mitigation measures. CMG has communicated to us that projects will not involve large-scale infrastructure construction that could lead to major negative externalities associated with such projects.

Environmentally sustainable management of living natural resources and land use



The relevance of this category is moderate because promoting sustainable agriculture, forestry and conservation of natural landscapes are not the most urgent environmental challenge confronting any of the group's business segments compared with other green categories. However, the category still addresses relevant sustainability challenges in the context of China, where rapid urbanization has resulted in the deterioration of urban vegetation across most Chinese cities⁴, and in response, the Chinese government has launched nationwide efforts toward fighting desertification⁵ and restoring ecological balance⁶.

The magnitude of this category is moderate, because while the eligible projects will have a positive environmental impact without major lock-in effects, the subcategories remain broadly defined and lack details on technical thresholds, which limits visibility into the full extent of the category's contribution to its stated objectives. CMG has communicated to us that the projects will follow the EU Taxonomy and the CBI criteria. For afforestation projects, CMG will obtain international certifications such as the Forest Stewardship Council Certificate or the Programme for the Endorsement of Forest Certification, which are widely used industry certifications that are in line with the CBI's Forestry, Land Conservation and Restoration criteria. However, for sustainable fisheries and aquaculture, it is important to have clear criteria or certifications to ensure that the associated negative externalities (for example overfishing, habitat destruction caused by some fishing methods, management of bycatch, pollution through aquaculture discharge, water resource management and so on) are appropriately addressed.

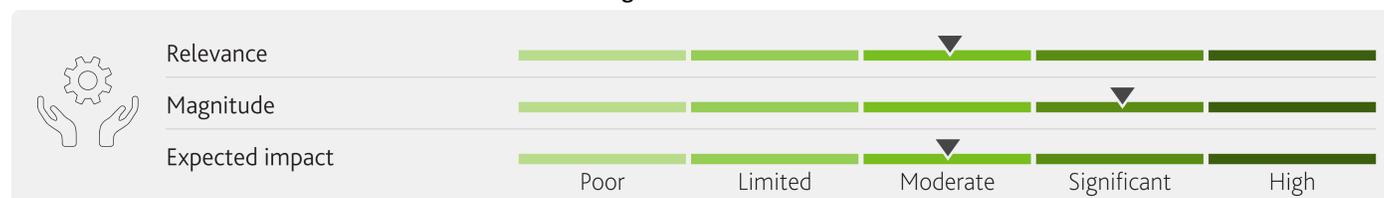
Circular Economy Adapted Products, Production Technologies and Processes



The relevance of this category is high, because the projects to be financed are in line with the national 14th Five-Year Plan for the Green Development of Industrial sector where the biobased materials have been prioritized. In July 2021, circular economy was also promoted for the next 5 years by China's top economic regulator to promote resource conservation and recycling in China to support the dual carbon targets in 2030 and 2060. The biobased materials are economically and environmentally sustainable compared with conventional petroleum-based materials. CMG confirmed that the proceeds from the coming issuances will be used to refinance the investment in the company which focuses on the production of biobased material and procure the biobased materials from that company. Considering the proceeds will be used to refinance the investment, the relevance of this category is high.

The magnitude of this category is moderate, because the biobased materials to be financed will substantially reduce the GHG emissions compared with the conventional products, but still could have moderate lock-in effect due to the consumption of fossil fuel for heating and fossil-related raw materials in the production process and the biobased materials are not biodegradable, could potentially not be fully recycled. The products to be financed are biobased materials produced mainly from organic sources such as corns, straws, wood, plants, etc. The company confirmed that for some of the products, the feedstocks are 100% from organic sources (e.g., crops), and the crops will be procured in a way to avoid competing with human food, e.g. from the subareas for grain production or waste crops that are no longer suitable for humans. It is also confirmed that some fossil-related raw materials are used for some of the products and the company to be financed is committed to moving towards 100% organic sources when possible. Based on the lifecycle (cradle to gate) GHG emission analysis provided by the company, biobased materials are expected to have 50% less GHG emissions compared with conventional materials. The company also confirmed that the biobased materials are recyclable, but not biodegradable. Therefore, the magnitude is moderate.

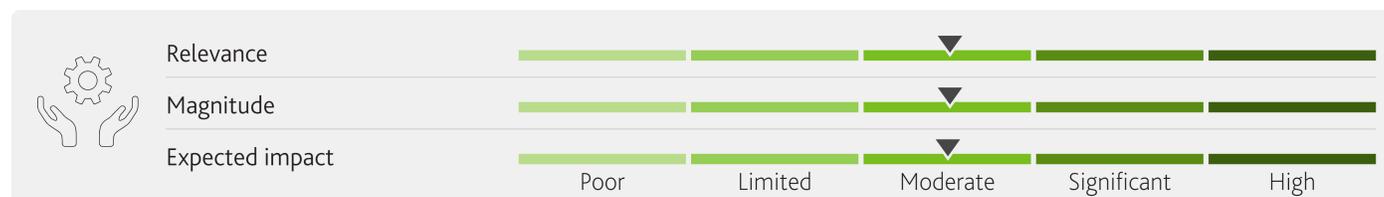
Access to essential services – Education and vocational training



The project category has moderate relevance, because low educational level and lack of access to vocational training are the critical challenges faced by rural residents in China. In underdeveloped areas of China, individuals tend to have lower education levels than their urban counterparts. While addressing these educational needs and implementing specific training programs could narrow the education gap and empower individuals in underdeveloped areas in China, the relevance of this category is considered moderate in the context of the company's business and sustainability challenges.

Projects in this category will have a significant contribution in reducing the educational barriers for the target groups — underserved communities residing in China's mountainous areas, rural areas, and key counties for national rural revitalization with limited access to basic education and vocational training. The company has launched free programs such as the C-Blue & Global Sustainable Transport Talents Training Program⁷, which brings educational services to areas with scarce educational resources. Another initiative, the Community For Good Programme⁸, has provided specialized agricultural training to rural farmers. This program has made a significant contribution by improving farmers' skills and awareness related to pesticide use and waste classification. Therefore, the magnitude of this category is significant.

Access to essential services - Healthcare



The project category has moderate relevance, because the rural healthcare sector faces significant challenges because of limited resources and a shortage of trained professionals. In response to these issues, the Chinese government has put in place policies and

incentive schemes to improve the standard of rural healthcare. While improving access to healthcare services in rural areas is crucial, it is not an urgent sustainability issue confronting the company's business division.

The category is likely to have a moderate magnitude, because while offering free medical training for rural doctors and nurses is likely to alleviate healthcare issues in rural communities, there is lack of details regarding the quality of the services provided, which limits our assessment of the level of impact on doctors in rural areas and the ultimate beneficiaries — rural residents.

Socioeconomic advancement and empowerment



The relevance of this category is moderate. Access to entrepreneurship is a critical element in job creation and economic transformation, particularly for less developed nations. Youth unemployment and inactivity can potentially lead to long-term effects that adversely affect the poverty levels and living standards of local communities. This underscores the need for ensuring fair access to employment in underdeveloped countries. Although this category is part of CMG's global community strategy, it is not deemed core in the context of the company's business or sustainability challenges.

Investments in this category are likely to have a moderate contribution to sustainability, because although the projects in this category could increase employment rates in underdeveloped countries, the category lacks specific details, such as the criteria for local youth, including age range and economic background. The company plans to invest in programs, services and facilities that promote equal access to opportunities such as entrepreneurship and innovation centers and leadership programs for local youth in underdeveloped countries. These projects aim to benefit individuals living below the poverty line as defined by the World Bank or the local government. However, unlike groups like children, the elderly, refugees and people with diseases, local youth are not regarded as the most vulnerable population in less developed countries. Therefore, the magnitude of this category is considered moderate.

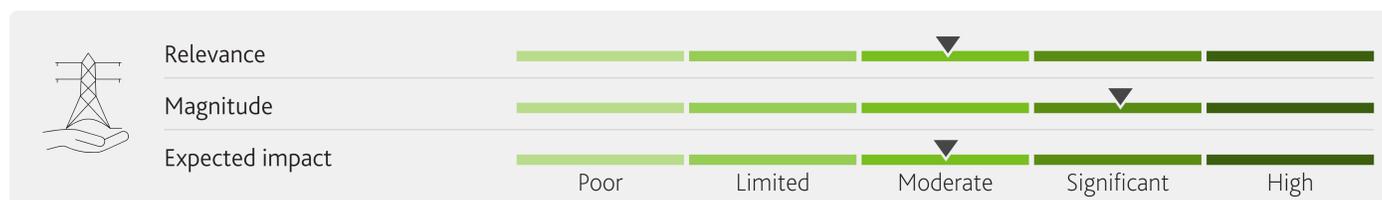
Affordable housing



This project category is considered highly relevant, because China is actively working to increase the availability of affordable rental housing as part of its efforts to resolve housing issues and considering urban and park development is one of the major business of CMG, increasing the supply of affordable housing for those in urgent need is highly relevant to the company's strategy. In 2021, 942,000 government-subsidized rental homes were made available in 40 key cities to assist new city residents and young people, with plans to have 2.4 million units of government-subsidized rental houses ready in 2022⁹. In July 2021, the Chinese government introduced the Affordable Rental Housing program¹⁰ to strengthen the rental housing market in major cities where housing affordability is a crucial issue for young and new residents.

The project category will have a high contribution in providing affordable housing to the target population. The company intends to fund projects that focus on safe, affordable and inclusive residential housing for communities experiencing housing difficulties, as defined by the local government. These communities include low-income families, recent job entrants, migrant workers, as well as those currently living in shantytowns, and dangerous and rundown housing. This project is deemed to target the most vulnerable populations in China. Moreover, affordable housing is regulated by the local government. For instance, Shenzhen, Shanghai and Beijing published the Affordable Housing Regulations in 2022, which clearly outline the eligibility criteria for applicants, and the housing prices are set by the government.

Affordable basic infrastructure



The project category has moderate relevance, because in China, providing affordable basic infrastructure is a substantial hurdle, especially in rural and underdeveloped regions. These areas frequently experience significant disparities in the quality and accessibility of crucial infrastructure services, such as roads, water supply, sanitation and electricity. Moreover, China is prone to natural calamities like floods, earthquakes and typhoons, which often inflict substantial damage to infrastructure, particularly in vulnerable regions. The persistent challenge is to rebuild and maintain resilient infrastructure in regions susceptible to disasters. However, this category is not considered core to the CMG's business and sustainability challenges.

The project category will have a significant contribution in providing affordable basic infrastructure to vulnerable target populations — underserved communities residing in China's mountainous areas, rural areas and counties. The company plans to initiate projects like constructing roads, bridges and water supply facilities, which will enhance the living standards of the target population. Most of the basic infrastructure is free, and the government controls the pricing of some projects to ensure affordability. Although the projects associated with affordable basic infrastructure could positively influence the target population, the projects lack specific details such as the scale and location of the projects. Therefore, the magnitude of this category is significant.

ESG risk management

We have not applied a negative adjustment for ESG risk management to the expected impact score. CMG has established a comprehensive ESG management system including a sustainability management team at the group level, and a sustainability committee at the board level and operation management level. CMG abides by China's Energy Conservation Law, Environmental Protection Law, and other relevant laws and regulations on environmental protection to ensure that financed projects will comply with relevant regulations. CMG will ensure that its subsidiaries also comply with laws and regulations on environmental protection, and occupational health and safety. The subsidiaries have established robust ESG management systems to identify, control and mitigate potential ESG-related risks within their operations.

Coherence

We have not applied a negative adjustment for coherence to the expected impact score. The projects to be financed under the framework align with CMG's sustainability priorities. CMG will support China's national dual carbon goals of carbon peaking by 2030 and carbon neutrality by 2060. CMG initiated various programs across its group activities to reduce carbon emissions from its operations, including low-carbon shipping, low-carbon port operations, low-carbon logistics, construction of green buildings, and use of renewable energy and green finance. In addition, CMG has confirmed that LNG carriers and all other fossil fuel carrier-related businesses account for less than 10% of the group's total revenue, which is not considered significant to CMG's overall business. While shipping is a significant contributor to climate change, particularly given the increasing global demand, CMG has rolled out plans and implemented actions to reduce the carbon emissions from their shipping, port and logistics operation, but the carbonization of shipping is constrained by the pace of technological advancement.

Appendix 1 - Mapping eligible categories to the UN's SDGs

The nine green and five social categories to be financed in CMG's sustainable financing framework are likely to contribute to 12 of the UN's SDGs, namely:

UN SDG 17 Goals	Eligible Category	SDG Targets
GOAL 1: No Poverty	<i>Affordable Housing</i>	1.4: Ensure all have equal rights to economic resources, access to basic services, property ownership and finance
GOAL 3: Good Health and Well-being	<i>Access to Essential Services – Healthcare</i>	3.8: Achieve universal health coverage with access to quality and affordable essential health-care services and medicines for all
GOAL 4: Quality Education	<i>Access to Essential Services – Education and Vocational Training</i>	4.3: Ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education
	<i>Socioeconomic Advancement and Empowerment</i>	4.4: Increase the number of youth and adults with technical and vocational skills for employment and entrepreneurship
GOAL 6: Clean Water and Sanitation	<i>Sustainable Water and Wastewater Management</i>	6.3: Improve water quality by reducing pollution, eliminating dumping and minimizing hazardous chemicals and materials
	<i>Terrestrial and Aquatic Biodiversity Conservation</i>	6.6: Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
GOAL 7: Affordable and Clean Energy	<i>Renewable Energy</i>	7.2: Increase substantially the share of renewable energy in the global energy mix
	<i>Energy Efficiency</i>	7.3: Double the global rate of improvement in energy efficiency
GOAL 8: Decent Work and Economic Growth	<i>Socioeconomic Advancement and Empowerment</i>	8.3: Promote policies that support productivity, job creation, entrepreneurship, innovation, and encourage the growth of SMEs
	<i>Circular Economy Adapted Products, Production Technologies and Processes</i>	8.4: Improve global resource efficiency and endeavour to decouple economic growth from environmental degradation
GOAL 9: Industry, Innovation and Infrastructure	<i>Renewable Energy</i>	9.4: Upgrade infrastructure and retrofit industries to make them sustainable, with all countries taking action
	<i>Energy Efficiency</i>	
GOAL 11: Sustainable Cities and Communities	<i>Clean Transportation</i>	11.2: Provide access to safe, affordable, accessible and sustainable transport systems for all
	<i>Green Buildings</i>	11.C: Support least developed countries, including through financial and technical assistance, in building sustainable buildings using local materials
GOAL 12: Responsible Consumption and Production	<i>Sustainable Water and Wastewater Management</i>	12.2: Achieve the sustainable management and efficient use of natural resources
	<i>Circular Economy Adapted Products, Production Technologies and Processes</i>	12.5: Substantially reduce waste generation through prevention, reduction, recycling and reuse
GOAL 13: Climate Action	<i>Climate Change Adaptation</i>	13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
GOAL 14: Life Below Water	<i>Environmentally Sustainable Management of Living Natural Resources and Land Use</i>	14.1: Prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities
	<i>Terrestrial and Aquatic Biodiversity Conservation</i>	14.3: Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
GOAL 15: Life on Land	<i>Environmentally Sustainable Management of Living Natural Resources and Land Use</i>	15.A: Mobilize and increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems

The mapping of the UN's SDGs in this SPO takes into consideration the eligible project categories and associated sustainability objectives/benefits documented in CMG's sustainable financing framework, and resources and guidelines from public institutions, such as the ICMA's SDG Mapping Guidance and the UN's SDG targets and indicators.

Appendix 2 - Summary of the eligible categories in CMG's framework

Eligible Categories	Description	Sustainability Objectives	Impact Reporting Metrics
Renewable Energy	<p>Financing the generation, distribution, transmission, research and development and related appliances and products of energy from renewable sources, including:</p> <ul style="list-style-type: none"> Onshore and offshore wind energy (including offshore wind power installation vessels) Solar energy Small scale hydro energy (maximum of 20 MW in installed capacity) Biomass (including for the production of sustainable fuels, solid and gaseous biomass; for heating and cogeneration facilities, carbon intensity will not exceed 16.0gCO₂e/MJ; for transportation sustainable fuels, carbon intensity will not exceed 18.8gCO₂e/MJ) Ocean power (wave, tidal, ocean currents, salt gradient) Related infrastructures allowing for more flexibility, such as battery energy storage 	Climate change mitigation	<ul style="list-style-type: none"> Annual GHG emissions reduced/avoided in tonnes of CO₂ equiv. (tCO₂) Annual renewable energy generation in MWh/GWh (electricity) and GJ/TJ (other energy)
Clean Transportation	<p>Financing and service for the construction, development, equipment, operation and maintenance of:</p> <ul style="list-style-type: none"> Port infrastructure required for low carbon water transportation, such as electricity charging, hydrogen-based refuelling and provision of shore-side electrical power to vessels at berth Retrofit and upgrade of vessels for electric drives and shore-side electrical power connection Electrification of equipment and vehicles for port and shipyard logistics, such as cranes, tractors, reach stackers, and forklifts, but also for road transportation as part of the logistics value chain Infrastructure for operation of Low-Carbon Highways, such as charging stations, battery changing facilities, hydrogen and refuelling stations, and electrification of vehicles 	<p>Climate change mitigation</p> <p>Pollution prevention and control</p>	<ul style="list-style-type: none"> Annual GHG emissions reduced/avoided in tCO₂ equiv. % reduction of air pollutants from a given base year: Particulate matter (PM), sulphur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), and non-methane volatile organic compounds (NMVOCs)
Green Buildings	<p>Financing the construction, development and refurbishment of new or existing buildings to be certified by a third party in accordance with, any one of the following certification systems:</p> <ul style="list-style-type: none"> U.S. Leadership in Energy and Environmental Design (LEED) – minimum certification of Gold; or BEAM Plus – minimum certification level of Gold; or BREEAM – minimum certification level of Excellent; or Chinese Green Building Evaluation Label (GBL) – minimum certification level of 3 stars; or Any other green building label, that is an equivalent standard of the above 	<p>Climate change mitigation</p> <p>Natural resource conservation</p>	<ul style="list-style-type: none"> Annual final and/or Primary Energy use in new or retrofitted buildings: kWh/m² of Gross Floor Area (GFA) Annual carbon reduction in new or retrofitted buildings: kg CO₂ /m² of GFA Annual water use before and after in new or retrofitted buildings: m³/m² of GFA of annual absolute (gross) water use
Terrestrial and Aquatic Biodiversity Conservation	<p>Investment in the conservation, protection and management activities to prevent loss or degradation of terrestrial and aquatic biodiversity:</p> <ul style="list-style-type: none"> Conservation activities to prevent habitat loss and degradation Protection measures to avoid, remedy or mitigate the adverse effects of activities, such as grass restoration, remediation and restoration of polluted soil 	Biodiversity conservation	<ul style="list-style-type: none"> Maintenance/ safeguarding/ increase of protected area/ OECM/ habitat in km² and in % for increase Absolute number of protected and/or priority species that are deemed sensitive in protected/ conserved area before and after the project
Sustainable Water and Wastewater Management	<p>Financing the equipment, development, manufacturing, construction, operation and maintenance of:</p> <ul style="list-style-type: none"> Clean drinking water Waste water treatment Sustainable drainage systems Flood and drought protection Management and restoration of waters 	<p>Climate change mitigation</p> <p>Natural resource conservation</p>	<ul style="list-style-type: none"> Annual absolute (gross) water use / wastewater treated, reused or avoided / raw or untreated sewage sludge that is treated and disposed of, before and after the project in m³/a, reduction in water use in %
Energy Efficiency	<p>Financing the development, purchase, operation and maintenance of energy efficiency facilities, and energy consumption reduction by a minimum of 30%:</p> <ul style="list-style-type: none"> Energy management systems for energy data accounting, analysis and monitoring Smart meters, smart grids and upgraded equipment such as LED lighting 	Climate change mitigation	<ul style="list-style-type: none"> Annual energy savings in total MWh/GWh (electricity) and GJ/TJ (other energy savings)/year Annual GHG emissions reduced/avoided in tonnes of CO₂ equivalent/b
Climate Change Adaptation	<p>Strengthening resilience of the infrastructure in case of severe weather (droughts, flood) and climate change events</p> <p>Designs for combating adverse weather conditions, such as sea-level rise and extreme weather events</p>	Climate change adaptation	<ul style="list-style-type: none"> Number and type of adaptation and resilience measure installed

Eligible Categories	Description	Sustainability Objectives	Impact Reporting Metrics
Environmentally Sustainable Management of Living Natural Resources and Land Use	<ul style="list-style-type: none"> • Sustainable agriculture • Sustainable animal husbandry • Implementation of climate-smart practices, such as crop biological protection and drip irrigation • Sustainable fisheries and aquaculture • Sustainable forestry, such as afforestation or reforestation • Conservation and restoration of natural landscapes 	Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> - Number of farmers trained in sustainable farming and biodiversity - Maintenance/ safeguarding/ increase of natural landscape area (including forest) in km² and in % for increase - Maintenance/ safeguarding/ increase of protected area/ OECM/ habitat in km² and in % for increase
Circular Economy Adapted Products, Production Technologies and Processes	<p>Financing the procurement, investment, , equipment, facilities, factories processes and R&D activities related to biobased, recyclable products and solutions, to increase the circularity of the production, prioritizing the reutilization of residual and waste materials. Examples include:</p> <ul style="list-style-type: none"> • Biological long-chain dibasic acids (LCDAs) • Bio-based pentamethylene diamine (PDA) produced with renewable biomass raw materials • Bio-based polyamides (PAs) produced with renewable biomass raw materials • Biological transformation process at room temperature, near neutral pHs, non-toxic raw materials and ambient pressure • Production of lactic acid from agricultural waste (such as straw) (for production of biodegradable polylactic acid material) • Other forms of utilization of recycled/waste/bio-based (RSB-certified) materials 	<p>natural resource conservation</p> <p>climate change mitigation</p>	<ul style="list-style-type: none"> - The % increase in materials, components and products that are reusable, recyclable, and/or certified compostable as a result of the project and/or in absolute amount in tonnes p.a. - Estimated annual GHG emissions avoided or reduced (tCO₂e) and/or energy savings (MWh per year)
Access to Essential Services – Education and Vocational Training	<p>Investment in the infrastructures, projects and facilities which provide:</p> <ul style="list-style-type: none"> • Courses, trainings and scholarships that expand access to education • Vocational trainings for farmers on pesticide application, ecological composting, and waste management <p>Target population:</p> <ul style="list-style-type: none"> • Education: Underserved communities residing in China's mountainous areas, rural areas, key counties for national rural revitalization with limited access to basic education • Vocational training: Underserved communities residing in China's mountainous areas, rural areas, key counties for national rural revitalization with limited access to vocational training 	Access to essential services	<ul style="list-style-type: none"> - Number of people provided with skill development and/or vocational training ideally for in demand subjects (breakdown by gender) - Teachers trained - Students Reached (breakdown by gender)
Access to Essential Services – Healthcare	<p>Provide medical trainings for rural doctors to improve disease prevention and public health management</p> <p>Target population:</p> <ul style="list-style-type: none"> • Doctors and nurses in China's mountainous areas, rural areas, key counties for national rural revitalization • Elderly population aged 60 and above in China's mountainous areas, rural areas, key counties for national rural revitalization 	Access to essential services	<ul style="list-style-type: none"> - Number of patients benefiting from healthcare or medical treatment - Number of doctors trained - Number of hospitals and other healthcare facilities built/upgraded
Socioeconomic Advancement and Empowerment	<p>Investment in programs, services and facilities which provide equitable access to opportunities:</p> <ul style="list-style-type: none"> • Entrepreneurship and innovation centres and leadership programs for local youth in disadvantaged countries <p>Target population:</p> <ul style="list-style-type: none"> • Population living below the poverty line as defined by the World Bank or local government 	Socioeconomic advancement and empowerment	<ul style="list-style-type: none"> - Number of products and services serving low-income groups - Number of students that receive support for equipment and facilities and technological modernisation - Number of people trained in new vocational skills - Jobs created, supported, and/or retained
Affordable Housing	<p>Provide safe, affordable and inclusive residential housing</p> <p>Target population:</p> <ul style="list-style-type: none"> • Communities with housing difficulties, as defined by local government, such as low-income families, newly employed graduates, migrant workers, migrant population as well as populations currently living in shantytown, dangerous and dilapidated housing 	Affordable housing	<ul style="list-style-type: none"> - Number of housing units built or refurbished - Amount of housing/social infrastructure loans disbursed to qualifying borrowers
Affordable Basic Infrastructure	<p>Provide safe, affordable and inclusive infrastructure, transportation and commercial facilities</p> <p>Target population:</p> <ul style="list-style-type: none"> • Underserved communities residing in China's mountainous areas, rural areas, key counties for national rural revitalization with inadequate infrastructure, such as unpaved, narrow, and dilapidated roads and bridges, inadequate water and irrigation facilities • Vulnerable communities as a result of natural disasters 	Affordable basic infrastructure	<ul style="list-style-type: none"> - Length of sustainable road construction with equitable access - Number of people with access to affordable transport systems

Moody's related publications

Second Party Opinion analytical framework:

» [Framework to Provide Second Party Opinions on Sustainable Debt](#), October 2022

Topic page:

» [ESG Credit and Sustainable Finance](#)

Endnotes

¹ [BP Statistical Review of World Energy](#), accessed on 20 September 2023.

² [IEA: An energy sector roadmap to carbon neutrality in China](#), accessed on 11 September 2023.

³ [The Safety of Drinking Water in China: Current Status and Future Prospects](#), accessed on 11 September 2023.

⁴ [NDVI indicated characteristics of vegetation cover change in China's metropolises over the last three decades](#), accessed on 11 September 2023.

⁵ [Five Year Plan for forests and grassland protection released](#), accessed on 11 September 2023.

⁶ [Why is it so important to protect the urban ecological environment?](#), accessed on 11 September 2023.

⁷ [C-Blue & Global Sustainable Transport Talents Training Program](#), accessed on 16 September 2023.

⁸ [Community For Good Programme](#), accessed on 16 September 2023.

⁹ [China to increase affordable rental housing supply](#), accessed on 14 September 2023.

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