

Second-Party Opinion

Alibaba Group Sustainable Finance Framework

Evaluation Summary

Sustainalytics is of the opinion that the Alibaba Group Sustainable Finance Framework is credible and impactful and aligns with the Sustainability Bond Guidelines 2018. This assessment is based on the following:



USE OF PROCEEDS The eligible categories for the use of proceeds – (i) Green Buildings, (ii) Energy Efficiency, (iii) COVID-19 Crisis Response, (iv) Renewable Energy, and (v) Circular Economy and Design – are aligned with those recognized by both the Green Bond Principles and Social Bond Principles. Sustainalytics considers that the eligible categories will provide environmental and social benefits such as improved energy efficiency and reduced GHG emissions of the Company's operations and relevant infrastructure while advancing the UN Sustainable Development Goals ("SDGs"), specifically SDGs 3, 7, 8, 9, 11 and 12.



PROJECT EVALUATION / SELECTION Alibaba Group's Sustainable Finance Committee (the "Committee"), composed of members from the Corporate Social Responsibility, Corporate Finance, and Investor Relations teams, will screen and select projects compliant with the eligibility criteria as required and at least annually. The Committee is chaired by the Deputy Chief Financial Officer. Sustainalytics considers the project selection process to be in line with market practice.



MANAGEMENT OF PROCEEDS Alibaba Group will manage net proceeds from the issuance of each Sustainable Finance Transaction using an internal register. The Corporate Finance team will be in charge of tracking and allocating net proceeds, and classifying Eligible Projects to either the Green Project Portfolio or the Social Project Portfolio. Pending allocation, net proceeds will be temporarily invested in cash or cash equivalents or short-term investments such as short-term liquid treasury bonds. This process is in line with market practice.



REPORTING Alibaba Group intends to report on the allocation of net proceeds on its website on an annual basis until full allocation. Allocation reporting will include information such as the amount allocated to each Eligible Project; the pending amount yet to be allocated; the percentage allocation in the Green Project Portfolio and Social Project Portfolio; and the percentage allocation in Eligible Projects aligned with each SDG, among others. In addition, Alibaba Group is committed to reporting on relevant impact metrics. Sustainalytics views Alibaba Group's allocation and impact reporting as aligned with market practice.

Evaluation Date	February 01, 2021
Issuer Location	Hangzhou, China

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Introduction

Alibaba Group Holding Limited's ("Alibaba Group", "Alibaba" or the "Company") businesses are comprised of core commerce, cloud computing, digital media and entertainment, and innovation initiatives. Alibaba was founded in 1999, operates globally, and the principal executive offices of its main operations are located in Hangzhou, China.

Alibaba has developed the Sustainable Finance Framework (the "Framework") under which it intends to raise financing from Sustainable Finance Transactions, such as green, social and sustainability bonds, loans, and other debt-like financing instruments, and use the net proceeds to finance and/or refinance, in whole or in part, existing and/or future projects that provide environmental and social benefits such as improved energy efficiency and reduced GHG emissions of the Company's operations and relevant infrastructure. The Framework defines eligibility criteria in four green areas and one social area.

Green Eligible Categories:

1. Green Buildings
2. Energy Efficiency
3. Renewable Energy
4. Circular Economy and Design

Social Eligible Category:

1. COVID-19 Crisis Response

Alibaba engaged Sustainalytics to review the Sustainable Finance Framework dated 2021 and provide a Second-Party Opinion on the Framework's environmental and social credentials and its alignment with the Sustainability Bond Guidelines 2018 (SBG).¹ This Framework has been published in a separate document.²

Scope of work and limitations of Sustainalytics Second-Party Opinion

Sustainalytics' Second-Party Opinion reflects Sustainalytics' independent³ opinion on the alignment of the reviewed Framework with the current market standards and the extent to which the eligible categories are credible and impactful.

As part of the Second-Party Opinion, Sustainalytics assessed the following:

- The Framework's alignment with the Green Bond Principles 2018, Social Bond Principles 2020, and Sustainability Bond Guidelines 2018, as administered by ICMA;
- The credibility and anticipated positive impacts of the use of proceeds; and
- The alignment of the issuer's sustainability strategy and performance and sustainability risk management in relation to the use of proceeds.

For the use of proceeds assessment, Sustainalytics relied on its internal taxonomy, version 1.6, which is informed by market practice and Sustainalytics' expertise as an ESG research provider.

As part of this engagement, Sustainalytics exchanged information with various members of Alibaba's Sustainable Finance Committee to understand the sustainability impact of their business processes and planned use of proceeds, as well as management of proceeds and reporting aspects of the Framework. Alibaba representatives have confirmed (1) they understand it is the sole responsibility of Alibaba to ensure that the information provided is complete, accurate or up to date; (2) that they have provided Sustainalytics with all relevant information and (3) that any provided material information has been duly disclosed in a timely manner. Sustainalytics also reviewed relevant public documents and non-public information.

This document contains Sustainalytics' opinion of the Framework and should be read in conjunction with that Framework.

¹ The Sustainability Bond Guidelines are administered by the International Capital Market Association and are available at <https://www.icmagroup.org/green-social-and-sustainability-bonds/sustainability-bond-guidelines-sbg/>.

² The Sustainable Finance Framework is available on Alibaba's website at: <https://www.alibabagroup.com/en/ir/esg>.

³ When operating multiple lines of business that serve a variety of client types, objective research is a cornerstone of Sustainalytics and ensuring analyst independence is paramount to producing objective, actionable research. Sustainalytics has therefore put in place a robust conflict management framework that specifically addresses the need for analyst independence, consistency of process, structural separation of commercial and research (and engagement) teams, data protection and systems separation. Last but not the least, analyst compensation is not directly tied to specific commercial outcomes. One of Sustainalytics' hallmarks is integrity, another is transparency.

Any update of the present Second-Party Opinion will be conducted according to the agreed engagement conditions between Sustainalytics and Alibaba Group.

Sustainalytics' Second-Party Opinion, while reflecting on the alignment of the Framework with market standards, is no guarantee of alignment nor warrants any alignment with future versions of relevant market standards. Furthermore, Sustainalytics' Second-Party Opinion addresses the anticipated impacts of eligible projects expected to be financed with net proceeds but does not measure the actual impact. The measurement and reporting of the impact achieved through projects financed under the Framework is the responsibility of the Framework owner.

In addition, the Second-Party Opinion opines on the intended allocation of net proceeds but does not guarantee the realized allocation of net proceeds towards eligible activities.

No information provided by Sustainalytics under the present Second-Party Opinion shall be considered as being a statement, representation, warrant or argument, either in favour or against, the truthfulness, reliability or completeness of any facts or statements and related surrounding circumstances that Alibaba Group has made available to Sustainalytics for the purpose of this Second-Party Opinion.

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the Sustainable Finance Framework

Sustainalytics is of the opinion that the Sustainable Finance Framework is credible, impactful and aligns with the four core components of the Green Bond Principles 2018 (GBP) and Social Bond Principles 2020 (SBP). Sustainalytics highlights the following elements of Alibaba Group's Framework:

- Use of Proceeds:
 - The eligible categories – (i) Green Buildings, (ii) Energy Efficiency, (iii) COVID-19 Crisis Response, (iv) Renewable Energy, and (v) Circular Economy and Design– are aligned with those recognized as impactful by the GBP and SBP. Sustainalytics believes the eligible categories will provide environmental and social benefits such as improved energy efficiency and reduced GHG emissions of the Company's operations and relevant infrastructure.
 - Alibaba's look-back period for refinancing activities is 36 months prior to the issuance of the respective bonds and loans. Additionally, Alibaba intends to achieve full allocation of proceeds within 36 months, which Sustainalytics considers to be in line with market practice.
 - For the Green Buildings category, Alibaba Group intends to invest in the acquisition, design, construction, and improvement of office space, commercial buildings or surrounding communities using recognized third-party certification standards, namely LEED "Gold" or above, BREEAM "Excellent" or above, Chinese Green Building Evaluation Label "2 Star" or above, or equivalent recognized standards. Sustainalytics views these certifications as credible, and the levels selected as impactful. (See Appendix 1 for further description of the referenced building standards.) Under the same category, Alibaba may invest in buildings that are within the top 15% most energy-efficient buildings in the region based on absolute emissions performance or primary energy demand. Sustainalytics considers the threshold of the top 15% of the local market to be consistent with market practice, and encourages Alibaba to provide further disclosure on the methodology to be used in determining the top 15% most energy-efficient buildings in the case of following this criterion.
 - Regarding the Energy Efficiency category, the Company intends to invest in data centers with Power Usage Effectiveness ("PUE") of 1.5 or less and energy-efficient technologies, products or equipment that are non-motorized or powered by electricity. Such technologies, products or equipment include the "Internet of Things", high-speed networks, data analytics, cloud computing technologies, cooling equipment, lighting systems, and energy storage and management systems that result in at least a 15% decrease of energy consumed or emissions generated.
 - Sustainalytics considers the criteria for financing data centers with a PUE of less than 1.5 to be aligned with market practice. Sustainalytics notes positively that the PUE of Alibaba Group data centers is lower than 1.35.

- Sustainalytics considers the financing of energy-efficient technologies, products or equipment with anticipated energy efficiency improvements to be aligned with market expectation and views positively the inclusion of a defined energy improvement threshold.
 - Alibaba has clarified that energy storage systems include battery storage only.
- As part of the COVID-19 Crisis Response category, Alibaba intends to provide support in the following areas:
 - Expenditures aimed at improving public access to medical equipment such as testing kits and vaccines and the conversion of manufacturing facilities to produce health, safety and hygiene supplies.
 - Expenditures aimed at enhancing the diagnostic capabilities of public health care services/infrastructure, and technical support to research institutions and other relevant organizations whose objectives are facilitating drug and vaccine development. Examples of technical support include the provision of artificial intelligence technology and computing power.
 - Relief measures and support programs for small and medium-sized enterprises (SMEs)⁴ affected by COVID-19. Examples of relief measures include the provision of waivers and reductions of annual service fees, platform technology fees and warehousing fees, while support programs include the provision of personnel and logistics support and tools with the objective of ensuring business and employment continuity through supporting the digitalization of businesses. Alibaba has clarified to Sustainalytics that the expenditures under this category are limited to the refinancing of mentioned relief measures and support programs, which were provided during China's COVID-19 outbreak, between January 2020 and June 2020, to ensure immediate support for the continued operation of SMEs. Looking forward, Alibaba commits to ensure adequate targeting of the most affected businesses, and provide further disclosure on the eligible beneficiaries, which Sustainalytics considers to be in line with market practice. (See Section 3: Impact of Use of Proceeds for additional information)
- Under the Renewable Energy category, Alibaba intends to invest in the acquisition, development, construction, operation, maintenance, or purchase of solar or wind energy projects and relevant battery storage installations. Alibaba confirmed that procurement projects will be directly tied to specific and identifiable renewable energy projects, and exclude one-time, short-term purchases of unbundled agreements.
- For the Circular Economy and Design category, Alibaba intends to invest in the installation of recycling and waste collection systems in office spaces, warehouses, logistics centers, commercial buildings, or surrounding communities; the procurement of recycled or reused materials; and the research and development of sustainable packaging materials.
 - Regarding the procurement of recycled or reused materials, Alibaba clarified that such materials would include recycled plastic only.
 - Regarding the research and development of sustainable packaging, Alibaba has clarified to Sustainalytics that intended packaging is limited to those using bio-based materials such as bioplastics.
- Alibaba has confirmed the Company will not knowingly invest in any projects, assets, technology or businesses associated with fossil fuels, child or forced labor, tobacco, and weaponry under the Framework.
- Project Evaluation and Selection:
 - Alibaba has established a Sustainable Finance Committee (the "Committee"), composed of members of the Company's Corporate Social Responsibility, Corporate Finance, and Investor Relations teams, to select projects that comply with the Framework's eligibility criteria as required and at least annually. Once confirmed, Eligible Projects will be classed under the Green Project Portfolio or the Social Project Portfolio. The Committee is chaired by the Deputy Chief Financial Officer.

⁴ Alibaba has confirmed that the Company follows relevant definitions of "small and medium-sized enterprises" in the various markets in which the Company operates.

- It will be the responsibility of the Committee to ensure that an amount equal or greater than the total net proceeds from Sustainable Finance Transactions that are outstanding matches the aggregate amount of eligible projects in the Green Project Portfolio and the Social Project Portfolio. In case expenditures to Eligible Projects are at the subsidiary level, such amounts will be adjusted for Alibaba's pro-rata equity ownership in the relevant subsidiary.
- Based on this governance structure with cross-divisional membership, Sustainalytics considers Alibaba's project evaluation and selection process to be in line with market practice.
- Management of Proceeds:
 - Alibaba will use an internal register to track net proceeds from each Sustainable Finance Transaction. Furthermore, the Corporate Finance team will be responsible for tracking the receipt and allocation of net proceeds to either the Green Project Portfolio or the Social Project Portfolio.
 - Pending allocation, net proceeds will be temporarily invested in cash or cash equivalents; or short-term investments in accordance with Alibaba's corporate treasury policy, such as treasury bonds. Alibaba excludes any greenhouse gas intensive projects which are inconsistent with the realization of a low carbon economy from its temporary allocation of net proceeds. In case a project no longer meets the eligibility criteria of the Framework, the project will be replaced, and the corresponding amount reallocated to other Eligible Projects.
 - Based on the use of an internal register and the handling of unallocated net proceeds, Sustainalytics considers this process to be in line with market practice.
- Reporting:
 - Alibaba commits to both allocation and impact reporting starting before the anniversary of the settlement of the first Sustainable Finance Transaction and yearly thereafter until net proceeds have been fully allocated.
 - Allocation reporting will include: the amounts and corresponding percentage shares of net proceeds allocated to Eligible Projects, and net proceeds yet to be allocated; amounts and corresponding percentage shares of net proceeds earmarked to Eligible Projects in (a) the Green Project Portfolio, (b) the Social Project Portfolio, and (c) each Project Category; and amounts and corresponding percentage shares of net proceeds earmarked to Eligible Projects, aligned with each SDG.⁵
 - Impact reporting will include (i) estimated environmental and social benefits resulting from the net proceeds earmarked to Eligible Projects, and (ii) the methodology and underlying assumption(s) relating to each impact indicator. Sample reporting indicators include gross floor area under qualifying third-party certifications (sqm); trailing 12-month PUE; the number of health, safety, and hygiene supplies distributed; renewable energy capacity purchased (MW); and recycling stations and bins installed.
 - Based on the commitment to reporting allocation at the portfolio level, Sustainalytics considers this to be in line with market best practice.

Alignment with Sustainability Bond Guidelines 2018

Sustainalytics has determined that the Sustainable Finance Framework aligns to the four core components of the Green Bond Principles (2018) and Social Bond Principles (2020). For detailed information, please refer to Appendix 2: Sustainability Bond/ Sustainability Bond Programme External Review Form.

Section 2: Sustainability Strategy of Alibaba Group

Contribution of Framework to Alibaba Group's sustainability strategy

Sustainalytics is of the opinion that Alibaba Group has a robust sustainability strategy that is guided on the principle of "long-term value creation that drives sustainable profits."⁶ The Company performed a materiality assessment under which it identified seven priorities as part of its sustainability strategy: (i) corporate governance; (ii) intellectual property rights protection; (iii) cybersecurity; (iv) data protection; (v) human capital; (vi) social impact; and (vii) environmental impact.⁷

⁵ Should an Eligible Project contribute to more than one Project Category, Alibaba will attribute apportioned amounts to each relevant Project Category.

⁶ Alibaba Group, "ESG Report 2018: Foundations for Sustainable Growth", at: <https://esg.alibabagroup.com/ui/pdfs/Alibaba-ESG-Report-2018.pdf>.

⁷ Alibaba Group, "ESG Report 2018: Foundations for Sustainable Growth", at: <https://esg.alibabagroup.com/ui/pdfs/Alibaba-ESG-Report-2018.pdf>.

On the environmental front, Alibaba has identified energy-efficient technologies as one of its key strategies to mitigate its environmental impact. As the Company relies heavily on hardware infrastructure and cloud computing, Alibaba has focused on making its data centers more energy efficient by switching to water-efficient and immersion cooling systems supported by automated systems and using renewable energy. As an example, Alibaba's Zhangbei Cloud Computing Data Center submerges servers in a non-conductive coolant. This system allows the removal of computation-generated heat with nearly no energy consumed for heat dissipation. The immersion cooling system is significantly more energy-efficient than traditional air-cooling systems saving over 70% of the energy. Along with energy-saving technologies and natural cooling approaches, Alibaba's Zhangbei Cloud Computing Data Center registers an annual average PUE of 1.18.⁸

Another example of an initiative that aims to reduce the Company's environmental impacts is the launch of the "Green Logistics Alliance" in which the Company has partnered with multiple companies to implement more sustainable practices across the logistics centers, service providers, warehouse operators, and trucking firms.⁹

From a social standpoint, through Tmall Global, (Alibaba Group's dedicated cross-border business-to-consumer ("B2C") e-commerce platform) the Company has implemented measures to support businesses affected by the pandemic through granting six-month waivers on annual service fees, allowing the free use of the platform's online shop setup tool, and other relief measures.¹⁰ Additionally, Alibaba has been running a series of programmes, including the Reliable Medicine-Sourcing initiative by Alibaba Health, which aims to provide a special channel for the delivery of medication to patients with chronic conditions in Hubei province.¹¹ The channel is part of Alibaba's continuous efforts to ensure access to crucial medication during the COVID-19 pandemic as distribution channels are significantly affected by the measures implemented to contain COVID-19 in China.

Sustainalytics is of the opinion that the Sustainable Finance Framework is aligned with Alibaba's overall sustainability strategy and initiatives and will further the Company's action on its key environmental and social priorities.

Well-positioned to address common environmental and social risks associated with the projects

While the eligible categories under the Framework are recognized as impactful by the GBP, SBP, and GLP, Sustainalytics acknowledges that the eligible projects may have potential environmental and social risks such as occupational health and safety, waste management, biodiversity issues associated with large-scale infrastructure development, risks related to the Company's own operational energy use and GHG emissions, and risks associated with being exposed to controversial businesses as a result of the Company's relief and support programs. Sustainalytics highlights the following systems and mechanisms and practices adopted by Alibaba to mitigate these risks:

- For Alibaba's infrastructure projects financed in China, Sustainalytics notes China's Environmental Impact Assessment Act, under which companies must perform an environmental risk assessment for all projects (construction, reconstruction, expansion or refurbishment) during the initial phase of project design and feasibility analysis. The Act stipulates that the evaluation must identify key risk factors related to air, water, soil pollution or human health. Moreover, the Act requires that companies undergo an independent and certified environmental impact assessment to avoid potential conflict of interest.¹²
- Alibaba Group has in place a Code of Ethics (the "Code"),¹³ which applies to all directors, officers, and employees of the Group and its consolidated subsidiaries. In addition to the Code, Alibaba provides training as part of its occupational health and safety principles, in a variety of safety training courses to improve employee safety awareness and safeguard their wellbeing. Furthermore, the Company has in place guidelines to uphold labor rights, including safeguards against forced or child labor.

⁸ Alibaba Group, "2019-2020 Corporate Social Responsibility Report", at: <http://csr.alibabagroup.com/uploads/file/20200716/5f10328ba887b.pdf>.

⁹ Alibaba Group, "ESG Report 2018: Foundations for Sustainable Growth", at: <https://esg.alibabagroup.com/ui/pdfs/Alibaba-ESG-Report-2018.pdf>.

¹⁰ Alizila, "Alibaba's Digital Economy Covid-19 Support Efforts", (2020), at: <https://www.alizila.com/alibaba-coronavirus-efforts/>.

¹¹ Alizila, "Alibaba News Roundup: Culture on the Cloud and Medicine Deliveries", (2020), at: <https://www.alizila.com/alibaba-news-roundup-culture-on-the-cloud-and-medicine-deliveries/>.

¹² Zhengzhou Weichi Foreign Enterprise Service Center, "Environmental Impact Assessment Law of the People's Republic of China", at: <http://www.waizi.org.cn/law/11686.html>.

¹³ Alibaba Group, "Corporate Governance: Code of Ethics", at:

https://www.alibabagroup.com/en/ir/governance_4#:~:text=I.&text=1.&text=Alibaba%20Group%20is%20committed%20to%20creating%20a%20workpla ce%20that%20supports,2.&text=Alibaba%20Group%20respects%20the%20privacy%20and%20dignity%20of%20all%20individuals.

- The Company's Integrity Compliance Department is in charge of conducting investigations when cases arise for non-compliance with the respective national laws or the Code of Ethics. This process applies to all directors, officers, and employees, of the Company, and it is maintained by annual training aimed at preventing violation and reporting on those that have occurred.
- The Company has a series of channels to engage different stakeholders, using its technology platforms for consumers and employees.
- As part of the Company's efforts in minimizing risks related to its own operational energy use, Alibaba has communicated to Sustainalytics that the average PUE of all self-developed data centers of the Company is below 1.35, which is below the global average of 1.67 (as of 2019).¹⁴
- Alibaba has confirmed the exclusion of any voluntary financing of projects, assets, technology or businesses associated with fossil fuel, child or forced labor, tobacco, and weaponry.

Based on the above, Sustainalytics believes that Alibaba is adequately positioned to identify, manage and mitigate environmental and social risks commonly associated with the use of proceeds. Sustainalytics encourages Alibaba to further establish publicly available risk management policies.

Section 3: Impact of Use of Proceeds

All five use of proceed categories are aligned with those recognized by the GBP or SBP. Sustainalytics has focused on three below, where the impact is specifically relevant in the local context.

Importance of green buildings and energy-efficient IT infrastructure

According to the United Nations Environment Program (UNEP), the building sector has the potential to avoid 50% of the projected energy consumption growth through facilitating highly energy-efficient or net-zero energy buildings and improving the existing building stock by 2030.¹⁵ Similarly, the Intergovernmental Panel on Climate Change (IPCC) reiterates that the building sector offers the largest cost-effective GHG mitigation potential, delivering savings and economic gains by implementing existing technologies, building design, and sound policy development.¹⁶

According to the China Construction Energy Saving Committee, energy consumption from the building sector accounted for 21% of China's aggregate energy use, and around 19.5% of energy-related CO₂ emissions in 2017.¹⁷ Under the 13th Five Year Plan for Construction Development, the Chinese government has set a target of increasing the share of urban green buildings to 50% of newly built green buildings and increasing the share of green building materials to be used for construction by 40%.^{18,19} Furthermore, as part of the 13th Five Year Plan for Energy Development (2016-2020), the government aims to achieve a reduction in energy consumption per unit of GDP by 15% in 2020 compared to 2015.²⁰ Based on this context, the opportunities for the Chinese green building industry are considered to be significant, with an estimated USD 12.9 trillion in potential low carbon building investments by 2030.²¹

Alibaba Group will allocate bond proceeds to finance and refinance green buildings and energy-efficient facilities and IT infrastructure, including data centers. In the case of IT infrastructure, global data centers are particularly energy-intensive and in 2018 accounted for approximately 2% of the world's energy

¹⁴ 2019 Data Center Industry Survey, at: <https://uptimeinstitute.com/resources/asset/2019-data-center-industry-survey>

¹⁵ Global Alliance for Buildings and Construction, "Towards zero-emission efficient and resilient buildings: Global Status Report" (2016), at: https://www.worldgbc.org/sites/default/files/GABC_Global_Status_Report_V09_november_FINAL.pdf.

¹⁶ IPCC, "Climate Change 2014: Mitigation of Climate Change: 5th Assessment Report", (2014), at: https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_frontmatter.pdf.

¹⁷ CABEE, "China Construction Energy Consumption Report 2019", at: <http://www.cabee.org/site/content/23565.html>.

¹⁸ WRI, "How Can China's Green Building Sector Grow Fivefold by 2030? 3 Cities Show Us the Way", (2017), at: <https://www.wri.org/blog/2017/05/howcan-china-s-green-building-sector-grow-fivefold-2030-3-cities-show-us-way>.

¹⁹ Global Alliance for Buildings and Construction, "Towards zero-emission efficient and resilient buildings: Global Status Report" (2016), available at: https://www.worldgbc.org/sites/default/files/GABC_Global_Status_Report_V09_november_FINAL.pdf.

²⁰ Grantham Research Institute on Climate Change and the Environment, "13th Five Year Plan", (2016), at: <https://www.climate-laws.org/geographies/china/policies/13th-five-year-plan>.

²¹ The International Finance Corporation, "Climate Investment Opportunities in Emerging Markets Report (2016)", available at: https://www.ifc.org/wps/wcm/connect/59260145-ec2e-40de-97e6-3aa78b82b3c9/3503-IFC-Climate_Investment_Opportunity-Report-Dec-FINAL.pdf?MOD=AJPERES&CVID=IBLd6Xq.

consumption.²² Investments in energy-efficient data centers suggest that the amount of data stored globally is expected to double every four years.²³ Due to rapidly increasing consumer dependency on networks and data, Sustainalytics believes investments in energy-efficient IT infrastructure, including data centers are essential to keep the global temperature increase below 2°C in conjunction with the Paris Agreement.²⁴

Sustainalytics is of the opinion that Alibaba's financing in green buildings and energy-efficient IT infrastructure is expected to provide positive environmental impacts by reducing the carbon footprint of the built environment and the IT sector.

Importance of sustainable packaging and use of recycled or bioplastics in advancing a circular economy

Given the rapid growth in global plastic pollution, and insufficient efforts towards recycling, the challenges relating to plastic pollution and waste management have reached a catastrophic scale. The manufacturing and usage of plastic have also increased use of fossil fuels, and hence climate change.²⁵

Notably, about 79% of the total plastic waste generated in 2015 remained untreated and was accumulated in landfills or the environment²⁶, contributing heavily towards environmental pollution. Some estimates even suggest that certain plastics may take as long as 400 years to decompose, largely due to the presence of additives that makes them difficult to break down.²⁷ These accumulated plastics make their way downstream into our oceans, carrying the high potential to kill aquatic life through entanglement in objects or through ingestion. The microplastics found in aquatic species eventually make their way into our bodies through the food chain.²⁸ It is estimated that an average person could be ingesting up to 5 grams of plastic every week, the equivalent of one credit card.²⁹ With the current trend, the annual flow of plastics may nearly triple by 2040 and lead to massive health consequences as well as financial liabilities associated with potential legislation around recycling and waste management.³⁰

In the case of China, which accounts for 29% of global plastic production, the country has become a top plastic consumer. Its largest landfill in the Shaanxi province has already gotten full, 25 years ahead of schedule after receiving nearly four times the waste than its original capacity.³¹ As part of its waste management efforts, in early 2018, China banned the import of most plastics from other nations through its "National Sword" policy.³² In early 2020, the country also announced its ambitious plan to ban non-biodegradable plastic bags across all cities and towns by 2022.³³

Through these net proceeds, Alibaba may finance or refinance the installation of recycling or waste collection or management programs and the procurement of recycled plastic, and the research and development of sustainable packaging based on biomaterials. Sustainalytics considers investments in the category of Circular Economy and Design as impactful and consistent with the objectives of a circular economy.

Importance of COVID-19 crisis response

²² PRWeb, "Data Centers Consume 2% of World's Energy—Hyper-Efficient New Solutions Usher in New Paradigm", (2018), at: http://www.prweb.com/releases/data_centers_consume_2_of_worlds_energy_hyper_efficient_new_solutions_usher_in_new_paradigm/prweb15925619.htm.

²³ IDC report, "IDC's Global StorageSphere Forecast Shows Continued Strong Growth in the World's Installed Base of Storage Capacity" at <https://www.idc.com/getdoc.jsp?containerId=prUS46303920>.

²⁴ Paris Agreement's target, at: https://ec.europa.eu/clima/policies/international/negotiations/paris_en.

²⁵ WWF report, "Plastic waste and climate change - what's the connection?", at <https://www.wwf.org.au/news/blogs/plastic-waste-and-climate-change-whats-the-connection#gs.lymsdu>.

²⁶ UN Environment, "Our planet is drowning in plastic pollution", at: <https://www.unenvironment.org/interactive/beat-plastic-pollution/>.

²⁷ National Geographic report, "The world's plastic pollution crisis explained", at: <https://www.nationalgeographic.com/environment/habitats/plastic-pollution/#:~:text=Plastic%20pollution%20has%20become%20one,ability%20to%20deal%20with%20them.&text=Plastic%20trash%20has%20become%20so,negotiated%20by%20the%20United%20Nations.>

²⁸ Encyclopedia Britannica, "Plastic Pollution In Oceans And On Land", at: <https://www.britannica.com/science/plastic-pollution/Plastic-pollution-in-oceans-and-on-land>.

²⁹ WWF Analysis, "No Plastic in Nature: Assessing Plastic Ingestion From Nature to People" (2019), at: https://www.wwfse.cdn.triggerfish.cloud/uploads/2019/06/dalberg-advocacy-analysis_for-web.pdf.

³⁰ The PEW Charitable Trusts and SystemIQ research, "Breaking the Plastic Wave" (2020), at: <https://www.systemiq.earth/breakingtheplasticwave/>.

³¹ BBC Report, "A rubbish story: China's mega-dump full 25 years ahead of schedule" published November 2019, at: <https://www.bbc.com/news/world-asia-50429119>.

³² Yale Environment 360 report, "Piling Up: How China's Ban on Importing Waste Has Stalled Global Recycling", at: <https://e360.yale.edu/features/piling-up-how-chinas-ban-on-importing-waste-has-stalled-global-recycling>.

³³ The Diplomat Report, "China Tackles Its Plastic Problem", at <https://thediplomat.com/2020/01/china-tackles-its-plastic-problem/>.

In March 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic after more than 121,000 cases had been reported in different parts of the world.³⁴ Since then, most nations have developed action plans to manage this unprecedented crisis and mitigate the spread of the virus. These efforts range from scaling up healthcare infrastructure to increasing admission capacity for COVID-19 patients and manufacturing and procuring medical equipment.

In the case of Mainland China, the first country to report multiple cases of pneumonia from COVID-19, the country has been able to control the spread of the virus with the cumulative case count reaching 95,000 in December 2020³⁵, far below the numbers reported in other highly populated countries.³⁶ The country implemented a series of mechanisms such as lockdowns supported by technology-based solutions of Alibaba Cloud.³⁷ Example of these technologies include CT Imaging Analytics Technology³⁸ that is designed to identify the characteristics of COVID-19 pneumonia in CT scans with approximately 96% accuracy, among others.^{39,40}

Alibaba intends to allocate net proceeds to facilitate access to medical equipment, provide technical support to organizations who play an active role in fighting COVID-19, and relief measures for SMEs who are affected by COVID-19 to ensure business and employment continuity. In this context, Sustainalytics views Alibaba’s COVID-19 response initiatives as having a positive impact on minimizing the adverse impacts of the pandemic.⁴¹

Alignment with/contribution to SDGs

The SDGs were set in September 2015 and form an agenda for achieving sustainable development by the year 2030. This sustainability bond advances the following SDGs and targets:

Use of Proceeds Category	SDG	SDG target
Green Buildings	11. Sustainable Cities and Communities	11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
Energy Efficiency	7. Affordable and Clean Energy 9. Industries, Innovation and Infrastructure	7.3 By 2030, double the global rate of improvement in energy efficiency 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
COVID-19 Crisis Response	3. Good Health and Well-Being 8. Decent Work and Economic Growth	3.8 Achieve universal health coverage, including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and

³⁴ CNBC report, "World Health Organization declares the coronavirus outbreak a global pandemic", at <https://www.cnbc.com/2020/03/11/who-declares-the-coronavirus-outbreak-a-global-pandemic.html>.

³⁵ WHO dashboard, "Global – China", at: <https://covid19.who.int/region/wpro/country/cn>.

³⁶ The Lancet report, "China's successful control of COVID-19", at [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30800-8/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30800-8/fulltext).

³⁷ Alibaba Cloud, "Alibaba Cloud Helps Fight COVID-19 through Technology", at: https://resource.alibabacloud.com/whitepaper/alibaba-cloud-helps-fight-covid-19-through-technology_1555.

³⁸ Alibaba Cloud, "CT Image Analytics for COVID-19", at: <https://www.alibabacloud.com/solutions/ct-image-analytics>.

³⁹ Alizila website, "Alibaba Unveils Technologies To Empower Partners In Fight Against Coronavirus", at: <https://www.alizila.com/alibaba-unveils-technologies-to-empower-partners-in-fight-against-coronavirus/>.

⁴⁰ Alibaba Cloud, "Epidemic Prediction Technology", at: <https://www.alibabacloud.com/solutions/health-epidemic-prediction>.

⁴¹ WHO dashboard, "WHO Coronavirus Disease (COVID-19) Dashboard" at <https://covid19.who.int/>.

		innovation, and encourage the formalization and growth of micro-, small-, and medium-sized enterprises, including through access to financial services
Renewable Energy	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
Circular Economy and Design	11. Sustainable Cities and Communities	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.
	12. Responsible Consumption and Production	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

Conclusion

Alibaba has developed the Sustainable Finance Framework under which the Company intends to raise financing from Sustainable Finance Transactions, such as green, social and sustainability bonds, loans, and other debt-like financing instruments, to finance and refinance, projects that provide environmental and social benefits such as improved energy efficiency and reduced GHG emissions of the Company's operations and relevant infrastructure. Sustainalytics considers that the projects funded by the sustainability bond proceeds will provide positive environmental and social impact.

The Sustainable Finance Framework outlines a process by which proceeds will be tracked, allocated, and managed, and commitments have been made for reporting on the allocation and impact of the use of proceeds. Furthermore, Sustainalytics believes that Sustainable Finance Framework is aligned with the overall sustainability strategy of the Company and that the use of proceed categories will contribute to the advancement of the UN Sustainable Development Goals 3, 7, 8, 9, 11 and 12. Additionally, Sustainalytics is of the opinion that Alibaba has adequate measures to identify, manage and mitigate environmental and social risks commonly associated with the eligible projects funded by the use of proceeds.




Based on the above, Sustainalytics is confident that Alibaba is well-positioned to raise financing from Sustainable Finance Transactions and that the Sustainable Finance Framework is robust, transparent, and in alignment with the four core components of the Green Bond Principles (2018) and Social Bond Principles (2020).

Appendices

Appendix 1: Green Building Certification Schemes

	LEED	BREEAM	Chinese Green Building Evaluation Label (CHINA 3-STAR)
Background	Leadership in Energy and Environmental Design (LEED) is a US Certification System for residential and commercial buildings used worldwide. LEED was developed by the non-profit US Green Building Council (USGBC) and covers the design, construction, maintenance and operation of buildings.	BREEAM (Building Research Establishment Environmental Assessment Method) was first published by the Building Research Establishment (BRE) in 1990. Based in the UK. Used for new, refurbished and extension of existing buildings.	The Chinese 3-Star Green Building Standard is a Certification System used in China for residential and public buildings (including commercial, hotel and government-owned) that was introduced in 2006 by MOHURD (Ministry of Housing and Urban-Rural Development).
Certification levels	Certified Silver Gold Platinum	Pass Good Very Good Excellent Outstanding	1-Star 2-Star 3-Star
Areas of Assessment: Environmental Performance of the Building	<ul style="list-style-type: none"> • Energy and atmosphere • Sustainable Sites • Location and Transportation • Materials and resources • Water efficiency • Indoor environmental quality • Innovation in Design • Regional Priority 	<ul style="list-style-type: none"> • Energy • Land Use and Ecology • Pollution • Transport • Materials • Water • Waste • Health and Wellbeing • Innovation 	<ul style="list-style-type: none"> • Land savings and outdoor environment; • Energy savings and utilization; • Water savings and utilization; • Material savings and utilization; • Indoor environment; • Operations and management.
Requirements	<p>Prerequisites (independent of level of certification) + Credits with associated points</p> <p>These points are then added together to obtain the LEED level of certification</p> <p>There are several different rating systems within LEED. Each rating system is designed to apply to a specific sector (e.g. New Construction, Major Renovation, Core and Shell Development,</p>	<p>Prerequisites depending on the levels of certification + Credits with associated points</p> <p>This number of points is then weighted by item⁴² and gives a BREEAM level of certification, which is based on the overall score obtained (expressed as a percentage). Majority of BREEAM issues are flexible, meaning that the client can choose which to comply with to build</p>	<p>Prerequisites:</p> <p>The system functions on a checklist basis, with 1-Star buildings meeting 26 criteria, 2-Star an additional 43 items, and 3-Star on a further 14 items. Criteria and weighting differ for public and residential buildings. In public buildings, more weight is given to energy and material savings, while the standard for residential buildings places greater importance on urban land saving and outdoor environments.</p>

⁴² BREEAM weighting: Management 12%, Health and wellbeing 15%, Energy 19%, Transport 8%, Water 6%, Materials 12.5%, Waste 7.5%, Land Use and ecology 10%, Pollution 10% and Innovation 10%. One point scored in the Energy item is therefore worth twice as much in the overall score as one point scored in the Pollution item.

	Schools-/Retail-/Healthcare New Construction and Major Renovations, Existing Buildings: Operation and Maintenance).	their BREEAM performance score. BREEAM has two stages/ audit reports: a 'BREEAM Design Stage' and a 'Post Construction Stage', with different assessment criteria.	
Performance display			

Appendix 2: Sustainability Bond / Sustainability Bond Programme - External Review Form

Section 1. Basic Information

Issuer name:	Alibaba Group Holding Limited
Sustainability Bond ISIN or Issuer Sustainability Bond Framework Name, if applicable:	Sustainable Finance Framework
Review provider's name:	Sustainalytics
Completion date of this form:	February 01, 2021
Publication date of review publication:	

Section 2. Review overview

SCOPE OF REVIEW

The following may be used or adapted, where appropriate, to summarise the scope of the review.

The review assessed the following elements and confirmed their alignment with the GBP and SBP:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Use of Proceeds | <input checked="" type="checkbox"/> Process for Project Evaluation and Selection |
| <input checked="" type="checkbox"/> Management of Proceeds | <input checked="" type="checkbox"/> Reporting |

ROLE(S) OF REVIEW PROVIDER

- | | |
|---|--|
| <input checked="" type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

Note: In case of multiple reviews / different providers, please provide separate forms for each review.

EXECUTIVE SUMMARY OF REVIEW and/or LINK TO FULL REVIEW (if applicable)

Please refer to Evaluation Summary above.

Section 3. Detailed review

Reviewers are encouraged to provide the information below to the extent possible and use the comment section to explain the scope of their review.

1. USE OF PROCEEDS

Overall comment on section (if applicable):

The eligible categories for the use of proceeds – (i) Green Buildings, (ii) Energy Efficiency, (iii) COVID-19 Crisis Response, (iv) Renewable Energy, and (v) Circular Economy and Design – are aligned with those recognized by both the Green Bond Principles and Social Bond Principles. Sustainalytics considers that the eligible categories will provide environmental and social benefits such as improved energy efficiency and reduced GHG emissions of the Company's operations and relevant infrastructure while advancing the UN Sustainable Development Goals ("SDGs"), specifically SDGs 3, 7, 8, 9, 11 and 12.

Use of proceeds categories as per GBP:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Renewable energy | <input checked="" type="checkbox"/> Energy efficiency |
| <input type="checkbox"/> Pollution prevention and control | <input type="checkbox"/> Environmentally sustainable management of living natural resources and land use |
| <input type="checkbox"/> Terrestrial and aquatic biodiversity conservation | <input type="checkbox"/> Clean transportation |
| <input type="checkbox"/> Sustainable water and wastewater management | <input type="checkbox"/> Climate change adaptation |
| <input type="checkbox"/> Eco-efficient and/or circular economy adapted products, production technologies and processes | <input checked="" type="checkbox"/> Green buildings |
| <input type="checkbox"/> Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBPs | <input checked="" type="checkbox"/> Other (please specify): Circular Economy and Design |

If applicable please specify the environmental taxonomy, if other than GBPs:

Use of proceeds categories as per SBP:

- | | |
|--|---|
| <input type="checkbox"/> Affordable basic infrastructure | <input type="checkbox"/> Access to essential services |
| <input type="checkbox"/> Affordable housing | <input type="checkbox"/> Employment generation (through SME financing and microfinance) |

- | | |
|---|--|
| <input type="checkbox"/> Food security | <input type="checkbox"/> Socioeconomic advancement and empowerment |
| <input type="checkbox"/> Unknown at issuance but currently expected to conform with SBP categories, or other eligible areas not yet stated in SBP | <input checked="" type="checkbox"/> Other (please specify): COVID-19 Crisis Response |

If applicable please specify the social taxonomy, if other than SBP:

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (if applicable):

Alibaba Group's Sustainable Finance Committee (the "Committee"), composed of members from the Corporate Social Responsibility, Corporate Finance, and Investor Relations teams, will screen and select projects compliant with the eligibility criteria as required and at least annually. The Committee is chaired by the Deputy Chief Financial Officer. Sustainalytics considers the project selection process to be in line with market practice.

Evaluation and selection

- | | |
|---|--|
| <input checked="" type="checkbox"/> Credentials on the issuer's social and green objectives | <input checked="" type="checkbox"/> Documented process to determine that projects fit within defined categories |
| <input checked="" type="checkbox"/> Defined and transparent criteria for projects eligible for Sustainability Bond proceeds | <input type="checkbox"/> Documented process to identify and manage potential ESG risks associated with the project |
| <input checked="" type="checkbox"/> Summary criteria for project evaluation and selection publicly available | <input type="checkbox"/> Other (please specify): |

Information on Responsibilities and Accountability

- | | |
|--|--|
| <input checked="" type="checkbox"/> Evaluation / Selection criteria subject to external advice or verification | <input type="checkbox"/> In-house assessment |
| <input type="checkbox"/> Other (please specify): | |

3. MANAGEMENT OF PROCEEDS

Overall comment on section (if applicable):

Alibaba Group will manage net proceeds from the issuance of each Sustainable Finance Transaction using an internal register. The Corporate Finance team will be in charge of tracking and allocating net proceeds, and classifying Eligible Projects to either the Green Project Portfolio or the Social Project Portfolio. Pending allocation, net proceeds will be temporarily invested in cash or cash equivalents or short-term investments such as short-term liquid treasury bonds. This process is in line with market practice.

Tracking of proceeds:

- Sustainability Bond proceeds segregated or tracked by the issuer in an appropriate manner
- Disclosure of intended types of temporary investment instruments for unallocated proceeds
- Other (please specify):

Additional disclosure:

- Allocations to future investments only
- Allocations to both existing and future investments
- Allocation to individual disbursements
- Allocation to a portfolio of disbursements
- Disclosure of portfolio balance of unallocated proceeds
- Other (please specify):

4. REPORTING

Overall comment on section (if applicable):

Alibaba Group intends to report on the allocation of net proceeds on its website on an annual basis until full allocation. Allocation reporting will include information such as the amount allocated to each Eligible Project; the pending amount yet to be allocated; the percentage allocation in the Green Project Portfolio and Social Project Portfolio; and the percentage allocation in Eligible Projects aligned with each SDG, among others. In addition, Alibaba Group is committed to reporting on relevant impact metrics. Sustainalytics views Alibaba Group's allocation and impact reporting as aligned with market practice.

Use of proceeds reporting:

- Project-by-project
- On a project portfolio basis
- Linkage to individual bond(s)
- Other (please specify): For each Project Category

Information reported:

- Allocated amounts
- Sustainability Bond financed share of total investment
- Other (please specify): the amounts and corresponding percentage shares of (a) net proceeds allocated to Eligible Projects, and (b) net proceeds yet to be allocated; amounts and corresponding percentage shares of net proceeds earmarked to Eligible Projects in (a) the Green Project Portfolio,

(b) the Social Project Portfolio, and (c) each Project Category; and amounts and corresponding percentage shares of net proceeds earmarked to Eligible Projects, aligned with each SDG.

Frequency:

- Annual Semi-annual
 Other (please specify):

Impact reporting:

- Project-by-project On a project portfolio basis
 Linkage to individual bond(s) Other (please specify):

Information reported (expected or ex-post):

- GHG Emissions / Savings Energy Savings
 Decrease in water use Number of beneficiaries
 Target populations Other ESG indicators (please specify): Sample reporting indicators include: gross floor area qualifying under identified third-party certifications (sqm); trailing 12-month PUE; number of health, safety, and hygiene supplies distributed; renewable energy capacity (MWh); and recycling stations and bins installed.

Frequency:

- Annual Semi-annual
 Other (please specify):

Means of Disclosure

- Information published in financial report Information published in sustainability report
 Information published in ad hoc documents Other (please specify):
 Reporting reviewed (if yes, please specify which parts of the reporting are subject to external review):

Where appropriate, please specify name and date of publication in the useful links section.

USEFUL LINKS (e.g. to review provider methodology or credentials, to issuer's documentation, etc.)

SPECIFY OTHER EXTERNAL REVIEWS AVAILABLE, IF APPROPRIATE**Type(s) of Review provided:**

- | | |
|--|--|
| <input type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification / Audit | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

Review provider(s):**Date of publication:****ABOUT ROLE(S) OF REVIEW PROVIDERS AS DEFINED BY THE GBP AND THE SBP**

- i. Second-Party Opinion: An institution with sustainability expertise that is independent from the issuer may provide a Second-Party Opinion. The institution should be independent from the issuer's adviser for its Sustainability Bond framework, or appropriate procedures such as information barriers will have been implemented within the institution to ensure the independence of the Second-Party Opinion. It normally entails an assessment of the alignment with the Principles. In particular, it can include an assessment of the issuer's overarching objectives, strategy, policy, and/or processes relating to sustainability and an evaluation of the environmental and social features of the type of Projects intended for the Use of Proceeds.
- ii. Verification: An issuer can obtain independent verification against a designated set of criteria, typically pertaining to business processes and/or sustainability criteria. Verification may focus on alignment with internal or external standards or claims made by the issuer. Also, evaluation of the environmentally or socially sustainable features of underlying assets may be termed verification and may reference external criteria. Assurance or attestation regarding an issuer's internal tracking method for use of proceeds, allocation of funds from Sustainability Bond proceeds, statement of environmental or social impact or alignment of reporting with the Principles may also be termed verification.
- iii. Certification: An issuer can have its Sustainability Bond or associated Sustainability Bond framework or Use of Proceeds certified against a recognized external sustainability standard or label. A standard or label defines specific criteria, and alignment with such criteria is normally tested by qualified, accredited third parties, which may verify consistency with the certification criteria.
- iv. Green, Social and Sustainability Bond Scoring/Rating: An issuer can have its Sustainability Bond, associated Sustainability Bond framework or a key feature such as Use of Proceeds evaluated or assessed by qualified third parties, such as specialized research providers or rating agencies, according to an established scoring/rating methodology. The output may include a focus on environmental and/or social performance data, process relative to the Principles, or another benchmark, such as a 2-degree climate change scenario. Such scoring/rating is distinct from credit ratings, which may nonetheless reflect material sustainability risks.

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