An S&P Global Second Party Opinion (SPO) includes S&P Global Ratings' opinion on whether the documentation of a sustainable finance instrument, framework, or program, or a financing transaction aligns with certain third-party published sustainable finance principles. Certain SPOs may also provide our opinion on how the issuer’s most material sustainability factors are addressed by the financing. An SPO provides a point-in-time opinion, reflecting the information provided to us at the time the SPO was created and published, and is not surveilled. We assume no obligation to update or supplement the SPO to reflect any facts or circumstances that may come to our attention in the future. An SPO is not a credit rating, and does not consider credit quality or factor into our credit ratings. See Analytical Approach: Second Party Opinions.

Second Party Opinion

Jinan Lixia Holding Group Co. Ltd.'s Green Finance Framework

Oct. 18, 2023

Location: China  
Sector: Engineering and Construction

Alignment With Principles

Aligned = ✔  Conceptually aligned = ○  Not aligned = ✗

✔ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)
✔ Green Loan Principles, LMA/LSTA/APLMA, 2023

See Alignment Assessment for more detail.

Strengths

The framework’s eligibility criteria rely on established certifications and standards. The eligible green buildings category refers to Chinese technical standards, taxonomy, and certifications. This adds transparency to project selection.

The framework’s reporting includes both expected and actual impact indicators, and follows the guidance of ICMA’s latest Harmonized Framework for Impact Reporting. This adds transparency for investors to assess and monitor the performance of the financed projects.

Weaknesses

No weakness to report.

Areas to watch

The point-based systems of green building certifications do not necessarily require minimum performance improvement thresholds. The issuer expects minimum energy savings for eligible certified green buildings, which partially mitigates the risk.

Jinan Lixia is yet to articulate a plan or initiatives to reduce buildings’ lifecycle emissions and indirect exposure to fossil fuels.

Jinan Lixia’s disclosures are limited, and it does not publish a sustainability report. This is common for Chinese local government-owned entities.

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Eligible Green Projects Assessment Summary

We use Shades of Green methodology to assess eligible projects under the issuer’s green finance framework, based on their environmental benefits and risks.

<table>
<thead>
<tr>
<th>Green Buildings</th>
<th>Light green</th>
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</thead>
<tbody>
<tr>
<td>Acquisition, construction, maintenance, and renovation of buildings that have received, or expect to receive one of the selected green building certifications.</td>
<td></td>
</tr>
<tr>
<td>Renewable energy and energy efficiency projects achieving energy savings of at least 10% in Jinan Lixia's certified properties.</td>
<td></td>
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</tbody>
</table>

See Analysis Of Eligible Projects for more detail.
Issuer Sustainability Context

This section provides an analysis of the issuer’s sustainability management and the extent to which the financing framework is part of the issuer’s overall strategy.

Company Description

Jinan Lixia is a Chinese local government-owned financing vehicle (LGFV) established in 2016 and based in Lixia District of Shandong Province. Its main focus is urban infrastructure construction (77% of revenue as of March 31, 2023), with primary land development, commercial development, property leasing, and related management services rounding out the remaining 23%. The Lixia District Finance Bureau of the Lixia District Government owns 90% of Jinan Lixia; and the Shandong Caixin Asset Management Co. Ltd, a wholly-owned subsidiary of the Shandong Province Finance Bureau, holds the remaining 10%.

As a financing vehicle that specializes in infrastructure development and construction, Jinan Lixia aims to drive the city’s growth. Through financing green buildings, it aims to promote and contribute to China’s 14th Five-Year Strategic Plan (2021-2025) for a low carbon economy.

Material Sustainability Factors

Climate transition risk

Engineering and construction companies contribute to global climate change mainly through embedded carbon in key materials like steel and concrete and the greenhouse gas (GHG) emitted during the project use phase, levels of which vary widely. Clients are more focused on lowering their GHG emissions because of regulatory risk, and also because GHG emissions have become an important consideration for stakeholders. Entities could experience reputational damage if they participate in highly carbon-intensive projects. China has national commitments to reach peak carbon emissions before 2030 and achieve carbon neutrality by 2060.

Physical climate risk

Physical climate risk is a material factor because of the potential for damage to assets and disruptions to a large number of stakeholders and operations. The severity of physical risks varies by region, but the fixed nature of construction projects heightens materiality. Chronic risks (such as an increase in precipitation) or acute risks (flooding, thunderstorms, and typhoons) require designing and building infrastructure that is resilient to known and projected climate hazards. Severe weather events can add risks during the construction phase. The likelihood of asset damage due to extreme weather increases without adaptation, more so in regions exposed to climate hazards. Unabated climate change could lead to estimated GDP losses of 0.5% to 2.3% as early as 2030 for China, according to the World Bank. Chinese provinces account for half of global locations that will be most exposed to extreme weather events by 2050. (Source: XDI, cited by the South China Morning Post).

Workforce health and safety

Construction sites can expose workers to safety risks from use of heavy machinery, falls, hazardous chemicals, and other potentially dangerous situations, translating into fatality and injury rates that are high relative to other sectors. A reliance on temporary employees and subcontractors also poses risks. Safety protocols in small companies tend to be laxer than in larger companies that typically have more satisfactory training, policies, and standards. China has ratified six occupational safety and health international labor conventions. The country has made remarkable progress on over the last two decades, with total workplace fatalities declining by 83% between 2005 and 2021. (Source: International Labor Organization article in China Daily.)
Issuer And Context Analysis

The framework’s green buildings project category aims to address climate transition risk, which is a material sustainability factor (MSF) for the entity. The project aims to align with Jinan Lixia’s vision to promote and contribute to the country’s 14th Five-Year Strategic Plan for environmental protection and development of a low-carbon economy. The company expects certified green buildings to achieve energy savings by 10-15%. However, it has not translated into any company-wide decarbonization targets, despite a low-carbon economy being a core part of Jinan Lixia’s sustainability strategy.

Jinan Lixia publishes limited sustainability disclosures. This which limits our insights into the company’s agenda to address these MSFs and how its other activities impact sustainability performance beyond the projects included in this framework. However, the company commits to reporting on its website the financed projects’ expected and actual impacts. This reporting includes quantitative impact indicators that follow the ICMA’s Harmonized Framework for Impact Reporting (June 2022). We view this as a strong practice.

Physical risks are important considerations for green buildings. Jinan Lixia relies on third-party feasibility studies and environmental impact assessments to establish systems to manage adverse climate impacts to its operations and assets. The company has limited disclosure on how it addresses physical risks in general, beyond compliance with local regulations, despite appearing common among local government-owned entities in China.

This green bond framework is not designed to address workforce health and safety, a key sustainability issue for the company. Still, the project commits to adhering to relevant safety regulatory requirements, including Jinan City Dust Pollution Prevention and Control Regulations, and the Emission Standard of Environment Noise for Boundary of Construction Site (GB12523-2011). The green financing group will also appoint a dedicated representative from the safety function to ensure overall safety management and supervision.
Alignment Assessment

This section provides an analysis of the framework’s alignment to Green Bond/Loan principles.

Alignment With Principles

- **Aligned = ✔**
- **Conceptually aligned = ⭕**
- **Not aligned = ✗**

- ✔ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)
- ✔ Green Loan Principles, LMA/LSTA/APLMA, 2023

✔ Use of proceeds

The framework’s green buildings project category is shaded in green. Jinan Lixia will allocate an amount equivalent to the proceeds exclusively to finance and refinance eligible green building projects. See Analysis of Eligible Projects for more information on our analysis of the environmental benefits of the expected use of proceeds. The maximum look-back period for refinanced projects is three years after issuance, in line with market practice.

✔ Process for project evaluation and selection

Jinan Lixia’s green financing group comprises representatives from the planning and design, industry research, finance, strategy, safety, legal audit, asset management and human resources functions. The group will meet annually to discuss and select projects according to the framework’s eligibility and exclusion criteria. Jinan Lixia will conduct feasibility assessments, and environmental impact assessments to identify and manage the associated environmental and social risks of the financed projects. Shortlisted projects will then be presented to the board of directors for approval. The company will disclose its risk management approach in its annual report. In addition, eligibility criteria refer to the China Green Bond Endorsed Projects Catalogue and green buildings certifications and standards. Clear eligibility criteria add transparency to project screening.

✔ Management of proceeds

The net proceeds of each green financing transaction will be deposited in a dedicated funding account and earmarked for allocation to eligible projects. Jinan Lixia will maintain a register to track the allocation of proceeds. The company commits to monitoring the net proceeds of all outstanding transactions. That includes periodically reallocating funds to replacement projects that comply with the eligibility criteria. Pending allocation, unallocated proceeds will be held in cash deposits.

✔ Reporting

The issuer commits to reporting the allocation of the net proceeds, and the expected and actual environmental impacts of the financed projects. The information will be made annually available on the company website or annual report until full allocation of the net proceeds. Jinan Lixia commits to referencing ICMA’s Harmonized Framework for Impact Reporting (June 2022) to guide the selection of relevant impact indicators.
Analysis Of Eligible Projects

This section provides details of our analysis of eligible projects, based on their environmental benefits and risks, using the *Analytical Approach: Shades Of Green Assessments*.

For each financing under the framework, the issuer expects to allocate the proceeds entirely to refinancing green buildings projects.

The eligible assets will include assets for which Jinan Lixia has commenced operations or placed-in-service prior to the applicable green financing, unless otherwise noted in the respective financing documents.

Overall Shades of Green assessment

Based on the project category shades of green detailed below, and consideration of environmental ambitions reflected in Jinan Lixia's green finance framework, we assess the framework as light green.

Green project categories

<table>
<thead>
<tr>
<th>Green buildings</th>
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<tbody>
<tr>
<td><strong>Assessment</strong></td>
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<tr>
<td>Light green</td>
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</table>

Analytical considerations

- Green building projects support climate change mitigation by alleviating greenhouse gas emissions associated with energy use. All Jinan Lixia’s eligible buildings will have to be certified within three years after construction or after renovation is complete. Although shorter timeframes reflect stronger market practices, this is partially mitigated as all eligible buildings will have to obtain a green building certification during the building pre-design stage. The issuer expects to deploy renewable energy technologies (e.g. solar power) and some energy efficiency equipment in the construction of new buildings.

- Jinan Lixia indicated that renovation of certified buildings will achieve at least 10% in energy savings. Despite exceeding local standards and applying to already certified buildings, the targets do not look that ambitious. This is partially mitigated by the issuer’s statement to us that its goal is to improve existing buildings’ energy performance to qualify for the Ultra-Low Energy...
Consumption Buildings (ULEB) label under the Technical Standard for Near-Zero Energy Building (GB/T51350-2019). ULEB requires thresholds for different aspects, including thermal, energy, load and comfort index, among others, which will require a minimum 50% energy savings below local energy standards. This goal is not stated in the framework. Furthermore, the timeline and plan are ambiguous.

- The framework does not target the highest certifications. For example, although the company anticipates most buildings will obtain Chinese Green Building Evaluation Label 2-star certifications, 1-star label (the lowest ranking) remains an eligible criterion.

- The company says that most of the proceeds will fund the construction of new buildings. This implies considerable embedded emissions and associated climate impact. The company mainly relies on selected certifications to address a given building’s environmental impact throughout its life cycle, such as material sourcing, energy, and waste management. While some green building certifications offer credit for addressing embedded emissions, their point-based systems imply that the framework’s minimum certifications could be achieved without addressing this issue thoroughly. Jinan Lixia plans to improve transparency by developing a green building materials sourcing and application database, which will include disclosures of the materials’ product certifications.

- Jinan Lixia has indicated that fossil fuel-based heating systems in buildings will not be eligible. Although heating, cooling, and lighting of the buildings will rely mostly on electricity sourced from the national grid, which still relies heavily on coal. by deploying renewable alternatives such as photovoltaic panels in building structures, Jinan Lixia aims to gradually reduce its indirect exposure to fossil fuels and associated lock-in risks. (See "China to raise share of non-fossil fuels in total energy mix to 18.3% in 2023," S&P Global Commodity Insights, April 13, 2023)

- Green buildings are exposed to physical climate risks, including flooding and thunderstorms in Lixia city. Jinan Lixia will commission third-party environmental impact assessments and feasibility studies for all projects to identify risks during design stage, and implement control measures during construction and operations stages. The issuer told us that to date the company had not been impacted by any severe climate events.

- The biodiversity risk appears low because projects will be planned and developed as per the local government’s urban infrastructure plan. New construction of buildings will take place on developed or government-approved sites, which are concentrated in Lixia city’s urban area.

- The issuer informed us that some green building projects will have associated water efficiency benefits from installing underground rainwater storage tanks for collection, filtering, and ultraviolet disinfection. The rainwater will be reused to clean public roads and car parks, in accordance with the requirements of Reuse of Urban Recycling Water—Water Quality Standard for Urban Miscellaneous Use (GB/T18920-2002).
## S&P Global Ratings' Shades of Green

<table>
<thead>
<tr>
<th>Assessments</th>
<th>Description</th>
<th>Example projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark green</td>
<td>Activities that correspond to the long-term vision of an LCCR future.</td>
<td>Solar power plants, Energy efficient buildings</td>
</tr>
<tr>
<td>Medium green</td>
<td>Activities that represent significant steps toward an LCCR future but will require further improvements to be long-term LCCR solutions.</td>
<td>Hybrid road vehicles, Health care services</td>
</tr>
<tr>
<td>Light green</td>
<td>Activities representing transition steps in the near-term that avoid emissions lock-in but do not represent long-term LCCR solutions.</td>
<td>Conventional steel production</td>
</tr>
<tr>
<td>Yellow</td>
<td>Activities that do not have a material impact on the transition to an LCCR future, or, Activities that have some potential inconsistency with the transition to an LCCR future, albeit tempered by existing transition measures.</td>
<td>New oil exploration</td>
</tr>
<tr>
<td>Orange</td>
<td>Activities that are not currently consistent with the transition to an LCCR future. These include activities with moderate potential for emissions lock-in and risk of stranded assets.</td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td>Activities that are inconsistent with, and likely to impede, the transition required to achieve the long-term LCCR future. These activities have the highest emissions intensity, with the most potential for emissions lock-in and risk of stranded assets.</td>
<td></td>
</tr>
</tbody>
</table>

Note: For us to consider use of proceeds aligned with ICMA Principles for a green project, we require project categories directly funded by the financing to be assigned one of the three green Shades.

LCCR—Low-carbon climate resilient. An LCCR future is a future aligned with the Paris Agreement; where the global average temperature increase is held below 2 degrees Celsius (2°C), with efforts to limit it to 1.5°C, above pre-industrial levels, while building resilience to the adverse impact of climate change and achieving sustainable outcomes across both climate and non-climate environmental objectives. Long term and near term—For the purpose of this analysis, we consider the long term to be beyond the middle of the 21st century and the near term to be within the next decade. Emissions lock-in—Where an activity delays or prevents the transition to low-carbon alternatives by perpetuating assets or processes (often fossil fuel use and its corresponding greenhouse gas emissions) that are not aligned with, or cannot adapt to, an LCCR future. Stranded assets—Assets that have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities (as defined by the University of Oxford).
Mapping To The U.N.'s Sustainable Development Goals

Where the financing documentation refers to the Sustainable Development Goals (SDGs), we consider which SDGs it contributes to. We compare the activities funded by the financing to the International Capital Markets Association (ICMA) SDG mapping and outline the intended linkages within our SPO analysis. Our assessment of SDG mapping does not impact our alignment opinion.

This framework intends to contribute to the following SDGs:

<table>
<thead>
<tr>
<th>Use of proceeds</th>
<th>SDGs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Buildings</td>
<td>11. Sustainable cities and communities*</td>
</tr>
</tbody>
</table>

*The eligible project categories link to these SDGs in the ICMA mapping.
Related Research

- China to raise share of non-fossil fuels in total energy mix to 18.3% in 2023, April. 13, 2023
- ESG Materiality Map Engineering and Construction, Oct. 6, 2022

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