

CHINA GREEN BUILDING MARKET SNAPSHOT 2020¹

This Green Building Market Snapshot provides a summary of key market indicators based on IFC's research on policy environment, building construction, and Green Building certification and finance. The year of the snapshot coincides with the launch of the UK-IFC Market Accelerator for Green Construction (MAGC) program in the country. Additionally, most recent Green Building developments in the market are included where available. IFC welcomes readers' comments.



CERTIFIED GREEN BUILDING MARKET STATUS: MODERATELY DEVELOPED

As of 2020, China's Green Building market was more advanced than other emerging countries. The current market development is very much government driven. The government includes Green Buildings as part of the country's national development plans, has had ambitious Green Building targets, provides incentives for new green building developments or renovations of buildings for energy efficiency, and requires all public buildings to be certified green. At the end of 2019, buildings rated by the government's green certification system, Green Building Label (GBL), represented 65% of the newly constructed urban buildings. In terms of international certification systems, LEED is popular among commercial developments, while other international certifications have gained less traction. Around 2 percent of new builds were certified by international certification systems in 2020.² In contrast to widespread adoption of the national Green Building rating system in the country, Green Building financing is less advanced. While several green bonds have been issued and a few big banks support Green Building projects, Green Building finance products have not been common.



COUNTRY LANDSCAPE

- Energy Consumption:** China accounted for 24% of global energy consumption in 2018. CO₂ produced by the construction industry in China accounts for about 30% of total emissions.³
- Construction Market:** The construction market is the largest one in the world. In 2019, the total output value of China's building construction industry was USD 3.9 trillion. China's property market accounts for a quarter of the country's USD 15 trillion GDP.⁴ The same year, the completed building area was 4.02 billion square meters.
- Developers:** There are around 100,000 developers in China, nearly all of them local developers. According to CRIC, the top three developers held a ten percent slice of the market, while the top 100 developers command over half (54%) in 2020.⁵ In 2020, more than 500 developers filed for bankruptcies and many more find themselves in financial trouble due to heightened regulatory scrutiny.⁶
- Finance:** China has one of the highest home ownership rates in the world. 90% of families in the country own their home. About 80% of these homes are owned without mortgages.⁷

1. GREEN BUILDING POLICIES AND REGULATIONS

Is there a national definition of Green Building?

The assessment standard for Green Buildings (GB/T 50378-2019) issued by the Ministry of Housing and Construction defines Green Building as a high-quality building which saves resources, protects the environment, reduces pollution, provides people with healthy space, and maximizes the harmonious coexistence between people and nature.

Is Green Building part of the country's Nationally Determined Contributions (NDC)?

Yes, the country has had Green Building specific targets in NDCs. The 2021 NDC promotes GHG emissions control from urban-rural development and construction area, focusing on Green Buildings.⁸ China will apply green building standards to all new urban buildings by 2025.

Is there a national Green Building strategy/action plan?

In July 2020, The National Development and Reform Commission, the Ministry of Housing and Construction, the Ministry of Commerce and other departments jointly issued the Action Plan for Green Buildings. It provides a clear direction to encourage development of Green Buildings and the use of Green Building materials. The target of the Action Plan is that by 2022, the proportion of GBL-rated Green Building area in new urban buildings will reach 70%.

Public Policy and Regulations

The Ministry of Housing and Urban-Rural Development's 12th and 13th 5-year development plans, Green Buildings and Eco-City Development (2011–2015) and the Building Energy Conservation and GB Development (2016–2020), set target standards for building energy efficiency.

Local provinces have also issued their own standards and regulations. As of 2021, there were 13 provinces and cities in China with established local assessment standards for Green Buildings: Beijing, Tianjin, Chongqing, Jiangsu, Guangdong, Guangxi, Fujian, Hebei, Hubei, Hunan, Shanxi, Zhejiang and Shenzhen.

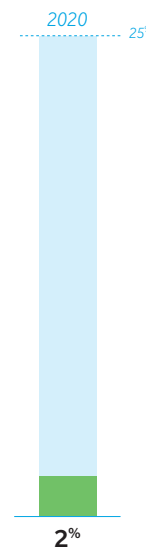
China has issued a series of guidelines and policies related to energy efficiency and green finance since 2012.

2. GREEN BUILDING MARKET SIZE

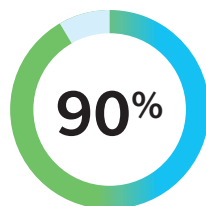
New and existing floor space certified green in 2020: 19 million square meters



Share of certified new green buildings among all new developments (based on square meters)



Share of green building developers among major developers



3. CERTIFICATIONS AND STANDARDS

National Green Building Rating Systems

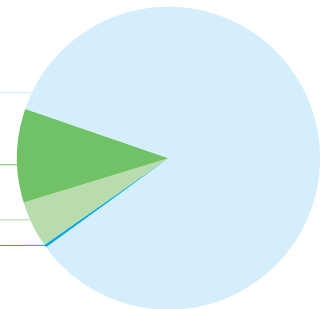
China's National Green Building rating system (GBL) was established in 2006. More than 20,000 projects have obtained GBL (Ministry of Housing and Urban-Rural Development of the People's Republic of China¹), representing 65% of newly constructed urban civil buildings. As of 2020, GBL-rated space was exceeding 2.5 billion sqm.

International Green Building Rating Systems

- ▶ LEED was introduced in 2003 and has certified nearly 2,600 projects, with around 95.8 million sqm, as of 2020.
- ▶ EDGE was launched in 2015 and has certified 0.5 million sqm as of 2020.
- ▶ BREEAM was officially launched in 2016 and has certified around 120 buildings, for an estimated 11.6 million sqm as of 2020.
- ▶ GREENMARK was launched in 2007 and has certified around 5.4 million sqm as of 2020.
- ▶ DGNB has certified 28 projects in China between 2018 and 2020. The related floor area is not available.

Voluntary Green Building certification systems' market share by square meters certified (as of 2020).

- ▶ LEED is 85% of cumulative GB
LEED residential 2%, non-residential 98%
 - ▶ EDGE is .5% of cumulative GB
EDGE residential 39%, non-residential 61%
 - ▶ BREEAM accounts for 10% of cumulative GB
BREEAM residential 60%, non-residential or mixed-use 40%
 - ▶ GREENMARK is 5% of cumulative GB
GREENMARK residential 49%, non-residential or mixed-use 51%
 - ▶ DGNB certified floor area in China is unknown.
- Cumulative percentage may not add up to 100% due to rounding.*



4. GREEN BUILDING FINANCE

Financial Institutions offering Green Building finance (by public/private) and their products as of 2019

- ▶ The review of the top 21 banks' 2020 annual or social responsibility reports shows that there are only a few financial institutions specializing in providing Green Building financing in China.
- ▶ In 2018, Beijing city agreed to pilot Green Building performance insurance, with the support of the World Bank and the Energy Foundation. At the end of 2018, Qingdao also began to cooperate with China Insurance to try to apply the green insurance model to ensure the operation performance of ultra-low energy consumption buildings.

Green bonds or other capital market instruments earmarked for Green Building finance between 2015 and 2020.

- ▶ Less than 10% of green bonds are issued in the field of Green Building.¹⁰ In 2019, six non-labeled bonds and 13 Green Building labeled bonds were issued. The largest number of labeled bonds was used for public buildings, and the largest number of non-labeled bonds was used for residential buildings.
- ▶ The green bonds issued by China's real estate industry are Longhu Real Estate, Contemporary Real Estate, Longshi Green Group, Taigu Real Estate and Henglong Real Estate.¹
- ▶ In 2018, China Construction Bank issued the first green construction panda bond (bond pass) for Henglong Real Estate. It is the first Green Building panda debt in the inter-bank market, and all the funds raised are used for the construction of Green Buildings.
- ▶ In 2020, the Hangzhou Branch of Pudong Development Bank invested more than \$0.94 billion in green credit including Green Buildings.
- ▶ In 2020, Huaxia Bank issued the "First Green Financial Bond of Huaxia Bank" for 63 projects including Green Buildings.
- ▶ Green Building finance is one of the key focus areas of the Industrial Bank. It provides green energy-saving renovation project loans for existing buildings and loans for the operation and maintenance of mature green building properties.

4. GREEN BUILDING FINANCE, *Continued*

Financial institution lending to Green Buildings as a % of total lending to building sector (Climate financing as a % of total bank credit)

- ▶ The green credit for building energy conservation and green building balance of 21 major banks in China accounted for 1.62% between 2014 and 2017.

Financial Incentives

- ▶ (2021 Update): The People's Bank of China (PBoC) offers all financial institutions in China cheaper funding for green loans. Any financial institution, including banks and non-banks, are eligible. FIs can borrow from the PBoC with an interest rate of 1.75% for 60% of the green loan, and offer this to clients at an interest rate similar to the Loan Prime Rate (LPR).

5. COST OF UTILITIES

Share of cost of utilities (Electricity and Water) for an average income: 13%¹¹



6. EDUCATION AND SKILLS

Number of Universities offering Green Building programs in 2020.

- ▶ Courses on green building are offered in some universities of architecture and science and technology universities.
- ▶ Shenyang University of Technology- Overview of green building design
- ▶ Chongqin University- Environmental architecture and quality
- ▶ Tsinghua University- Assessment standard and technical strategy for green building
- ▶ In addition, the courses covered by architecture and environment-related majors in universities also include Green Buildings as part of the curriculum covered by courses.

ENDNOTES

1. If not footnoted, the source of the information is a report prepared by a STC hired by IFC in 2021.
2. IFC's calculations consider the formal construction sector. The rate covers EDGE post-design, LEED, BREEAM and Green Mark certified floor area divided by estimated new build for the formal sector, for calendar year 2020. There may be a delay between certification and completion of the building. DGNB certified floor area in China is unknown. Green Mark numbers were retrieved from SLEB Smart Hub (<https://www.sleb.sg/Building/GreenMarkBuildingsDirectory>) by a STC hired by IFC in 2021. LEED numbers were retrieved from USGBC website (<https://www.usgbc.org/projects>) on March 14, 2022. EDGE numbers were retrieved from EDGE App data as of December 31, 2021. BREEAM numbers were estimated by IFC based on numbers retrieved from BREEAM website (<https://tools.breeam.com/projects/explore/buildings.jsp>) by a STC hired by IFC in 2021. Green certification numbers do not differentiate between buildings certified with more than one certification system or product (that is, each certification is counted as unique) and include certifications for existing buildings. Estimated new build was retrieved from the website of the National Bureau of Statistics of China.
3. 2020 Annual Report on China Building Energy Consumption
4. <https://www.reuters.com/markets/rates-bonds/even-tech-hub-shenzhen-chinas-property-market-succumbs-chills-2021-11-28/>
5. www.shine.cn/biz/property/2012010876/
6. <https://www.forbes.com/sites/forbesbusinesscouncil/2021/12/06/what-can-we-learn-from-the-real-estate-developer-crisis-in-china/?sh=5b9a6737e191>
7. <https://www.forbes.com/sites/wadeshepard/2016/03/30/how-people-in-china-afford-their-outrageously-expensive-homes/?sh=83eaa1da3ce5>
8. <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/China%20First/China%E2%80%99s%20Achievements,%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf>
9. IFC's estimate based on LEED publicly available data.
10. Zhang Yi. Financial support for green building development status, constraints and policy recommendations [J]. Financial Vertical and Horizontal, 2019 (3): 76-83
11. Statistical Communiqué of the People's Republic of China on the 2020 National Economic and Social Development (stats.gov.cn)

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CONTACTS

- MAGC Research, magc-research@ifc.org