From Zero to Hero
lessons and experiences from the growth of the Chinese green bond market

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What is a green bond?

International Green Bond Definitions
Green Bond Principles vs. Climate Bonds Standards

“**The Green Bond Principles** are intended for broad use by the market: they provide issuers with guidance on the key components involved in launching a credible Green Bond...”

“**The Climate Bonds Standard** sets out clear criteria to verify certain green credentials of a bond or other debt instrument. It aims to provide a robust approach to verifying that the funds are being used to finance projects and assets that are consistent with delivering a low carbon and climate resilient economy...”
# Climate Bonds Taxonomy

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
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<tbody>
<tr>
<td><strong>ENERGY</strong></td>
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<tr>
<td>Solar</td>
<td>Rail, Built (grey) infrastructure</td>
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<td>Wind</td>
<td>Vehicles, Green and hybrid infrastructure</td>
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<td>Geothermal</td>
<td>Mass transit</td>
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<td>Hydropower</td>
<td>Bus rapid transport</td>
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<td>Bioenergy</td>
<td>Water-borne transport</td>
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<td>Wave and Tidal</td>
<td>Alternative fuel Infrastructure</td>
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<td>Energy distribution &amp; management</td>
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<td>Dedicated transmission</td>
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<td><strong>TRANSPORT</strong></td>
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<td><strong>WATER</strong></td>
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<td><strong>LOW CARBON BUILDINGS</strong></td>
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<td><strong>INFORMATION TECHNOLOGY &amp; COMMUNICATIONS</strong></td>
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<td><strong>NATURE BASED ASSETS</strong></td>
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<td><strong>INDUSTRY &amp; ENERGY-INTENSIVE COMMERCIAL</strong></td>
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Certification Criteria approved
Criteria under development
Due to commence
A global green bond market in 2017

- **Canada**: $3.4bn
- **United States**: $42.4bn
- **Mexico**: $4bn
- **Spain**: $5.6bn
- **France**: $22.0bn
- **Netherlands**: $4.3bn
- **Sweden**: $5.3bn
- **Germany**: $9.6bn
- **India**: $4.2bn
- **Supranational**: $9.2bn
- **China Total issuance**: $37.1bn
  - $22.9bn (aligned)
  - $14.2bn (not aligned)

Bar chart showing issuance in billions for 2014-2017:
- 2014: 30
- 2015: 45
- 2016: 75
- 2017: 180

Countries:
- **Other country**
- **USA**
- **China**
Issuer type: US vs China

- **US:**
  - Government-Backed Entity: 37%
  - Local Government: 26%
  - Non-Financial Corporate: 34%
  - Commercial Bank and other financial institutions: 3%

- **China:**
  - Government-backed: 10%
  - Non-financial Corporate: 28%
  - Policy Bank: 15%
  - Commercial Bank and other financial institutions: 47%
The Troika that has been driving the China green market

- Xi Administration’s commitment to develop the “Ecological Civilization”
- People’s Bank of China (PBoC)
- National Development and Reform Commission (NDRC)
- China Securities Regulatory Commission (CSRC)
- National Association of Financial Market Institutional Investors (NAFMII)
- Stock exchanges
- Green bond indices
- Green bond verification agencies
Timeline: green finance & green bond policies

- People’s Bank of China (PBOC) issued green bond guidelines
- National Development and Reform Commission (NDRC) issued green bond guidelines
- Green Financial System endorsed in 13th Five Year Plan
- Shanghai Stock Exchange and Shenzhen Stock Exchange announced Green Bond Pilot Programmes
- 7 ministries jointly released “Guidelines for Establishing Green Financial System”
- China Securities Regulatory Commission (CSRC) issued green bond guidelines
- NAFMII approved green finance and innovation pilot zones in five provinces
- PBoC and CSRC jointly released ‘Green Bond Assessment and Verification Guidelines’ for green bond verifiers and verification activities in China
Who is providing external reviews?

58% provided by the “Big 4s”

- EY
- PWC
- Deloitte
- KPMG
- CICERO
- China Credit Rating
- CECEP
- Zhongcai Green Financing
- CCXI
- Syntao Green Finance
- BV
- Lianhe Equator
- n.a
China green bond market: use of bond proceeds

- Clean Energy: 22%
- Energy efficiency or low carbon building: 12%
- Low Carbon Transport: 19%
- Water: 16%
- Adaptation: 16%
- Waste Management: 12%
- Agriculture, forestry and other land use: 3%
- Adaptation: 16%

By Climate Bonds Taxonomy
Only 62% of green bonds from China are in line with international definitions

Challenges: harmonization of green bond definitions

Bonds fail to meet international definitions because:

1. **Differences in green eligibility definitions**
   - Clean coal technologies
   - Coal power plant retrofit
   - Large hydro
   - and others

2. **More than 5% of proceeds allocated to working capital**
   - Threshold – at least 95% should be used as green

3. **Lack of disclosure**
Key deals: retail green bond

China Development Bank

- CNY 5bn ($763.2m), CNY 600m of the bond is available to individual investors
- Use of Proceeds: water protection and treatment projects in central China's provinces along Yangtze river
- Expected environmental impacts:
  - Reduction in BOD 365 t/a;
  - TSS 5787 t/a;
  - TN 761 t/a;
  - TP 60 t/a;
  - ....

Retail Green Bond

- Coupon rate 4.5%
- Tax exemption

Raise Environmental Awareness
Increase individual green investors base

Climate Bonds
Key deals: one belt one road and opportunities for green bonds

Industrial and Commercial Bank of China’s (ICBC)
- USD2.15bn in 3 tranches
- Listed on Luxembourg Green Exchange
- “One Belt One Road Green Climate Bond”
- Use of Proceeds: renewable energy, low carbon transportation, sustainable water, etc.
- European investors took over 70% of the deal

Opportunities: greening infrastructure projects along the belt and road.

One Belt One Road Initiative
- Covering 68 countries
- 65% of the world's population
- 40% of the global GDP as of 2017
Key deals: green investment overseas

Geely Auto (London Taxi Company)

- USD 400 million
- Listed on Singapore Stock Exchange
- Use of proceeds: manufacturing hybrid battery-powered London black cab
- 90% allocated to Asian investors
- 6 times oversubscribed
Key deals: dual recourse green bond

Bank of China

- USD 500m
- Listed on London Stock Exchange
- Dual recourse structure allowing claims over a dedicated “asset pool”, and the usual claim against Bank of China.
- Rated Aa3 by Moody's

Green Bond

- Use of proceeds
  - Water
  - Clean transport
  - Clean energy

Asset Pool

- Constituents in the Climate-aligned Bond Index

- Credit enhancement
- Invest in green bonds
- Lower climate risks on balance sheet
Key deals: moving to green

Three Gorges Finance II (Cayman Islands) Limited

- EUR 650 million
- Listed on Irish Stock Exchange
- Use of proceeds: **100% Wind Energy**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Location</th>
<th>Project</th>
<th>Use of Proceeds (€ Mil.)</th>
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<tbody>
<tr>
<td>Green Energy</td>
<td>Germany</td>
<td>Offshore Wind</td>
<td>€400</td>
</tr>
<tr>
<td>Green Energy</td>
<td>Portugal</td>
<td>Onshore Wind</td>
<td>€250</td>
</tr>
</tbody>
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- Expected climate impact: reduction of 2.21 million tons of CO2
- Certified by Climate Bonds Initiative
- Can a brown company issue green bonds?
Next steps – what to expect in 2018?

1. Harmonization of green bond definitions
   - Domestic: PBoC and NDRC
   - International: EIB and PBoC

2. Opportunities: greening the one belt one road

3. Local government financing vehicles (LGFVs)
   - What is a LGFV?
   - Longer investment horizon
   - Green Finance Pilot Zones will accelerate green bonds issuance from local government and LGFVs
Next steps – what to expect in 2018?

4. Green securitization

5. Hong Kong, the next powerhouse for green bond market
   • Bond Connect scheme
   • The largest government green bond programme just released
   • Incentives for green bond issuing

6. More green bond based financial products
   • Green bond fund and ETF
Thank you!

For further information please contact:
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Climate Bonds Initiative www.climatebonds.net